YACHTING

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OFF TO A GOOD START

How to Run Power Boat Races

A Description of the Various Methods of Handicapping Boats to Give the Best Results in Mixed Fleets. The Use of Time Allowance Tables. The Bang-and-Go-Back Races

By HERBERT L. STONE

PART I.—METHODS OF HANDICAPPING

THE greatest difficulty that faces the Regatta Committee of any motor boat club is that of finding some easy and equitable basis of handicapping that will permit the average heterogeneous collection of power boats comprising the club's fleet to be raced together. In the average club we find one or two racing boats whose speed is pretty well known, a mixed lot of cruisers, from a trunk-cabin dory to the big 60-footer, and the usual collection of open "crates" with a speed ranging anywhere from five to fifteen miles an hour, each of whose owners thinks he has the fastest thing on his own pond. Most of these men are willing to prove their contention as to the theoretical speed of their boats, and, to this end, it is up to the overworked Regatta Committee to devise some means of racing this fleet so as to please every owner—manifestly an impossible task. There are, however, certain general principles that hold true in all motor boat racing, and several fairly satisfactory methods of reducing power boats down to a common denominator, as it were, have been worked out to suit just such tough propositions.

A. P. B. A. RULES

Probably most of the power boat races in this country are held under a theoretical handicapping system known as the A. P. B. A. rules, owing to the fact that they were worked out by the American Power Boat Association, and are practically the only rules in this country on which any reliable data can be had. These rules were worked out on an absolutely theoretical basis, and apply fairly well to boats of the same type when racing against each other. But no set of rules, however well formulated, will take care in a satisfactory manner of boats of widely different size and type, such as the high-speed hydroplane and the displacement cruiser, when racing against each other.

It is, therefore, necessary, first of all, no matter what rules are applied, to divide the boats into certain general classes which take into consideration type, speed and size. Even the American Power Boat Rules classify the boats in this way, and divide the boats racing under their racing formula into such groups as cruisers, open boats, racers and hydroplanes, the racers and hydroplanes being subdivided into classes according to size, such as the 20-foot class, the 26-foot class, the 32-foot class and the 40-foot class. In addition to these, the Association is now advocating limited classes of various sizes, with certain restrictions as to weight and cylinder volume.

We will take up, first of all, the method of the A. P. B. A. and review it briefly for the benefit of those who have not yet raced under it; and will follow this with a discussion of a number of other simple methods of handicapping these various classes which do not require the use of a regular time allowance table worked out from a theoretical formula.

After dividing the boats into the classes just mentioned, a fuller description of which can be obtained from the Year Book of the

THE FINISH OF A THREE-MILE BANG-AND-GO-BACK RACE, SHOWING HOW CLOSELY THE BOATS ARE BUNCHED IN SPITE OF THE WIDELY MIXED CHARACTER OF THE FLEET

A. P. B. A., it is necessary to know what each boat measures, or rates, as it is called, according to the formula in use. Generally speaking, the factors which enter into a rating formula are: length on the waterline, the horsepower of the engine and the displacement (weight) or—what is its equivalent for the purpose of the formula—the area of the immersed 'midship section of the boat. After considerable research and with data concerning four-cycle motors which Mr. H. J. Gielow, the measurer of the association, had gathered, a rating formula was evolved which, expressed in ordinary terms, reads as follows: A boat's rating equals the cube root of the square root of the load waterline multiplied by the horsepower and divided by the area of 'midship section. If the factors of two boats were worked up according to this, and for one boat the rating was 2, and for the other 3, the meaning would be that the boat having the higher rating would cover, say, three miles, while the one with the lower rating would cover two miles during the same period of time; in other words, rating is an indication of the relative speed of a boat. With these factors as a basis, plus an arbitrary constant, a time allowance table was worked out for all ratings from fifteen to one hundred, so that the time that any one boat must allow any other boat can be obtained at a glance from these tables.

While the formula itself is apparently simple, the actual application is more or less difficult for the layman, as he must obtain the horsepower by another theoretical formula and the area of the 'midship section by still another, so that unless there is a measurer in the club who has had some training as a naval architect, or who has studied the formula closely, it will be practically impossible for any club to properly "rate" its boats. Much of the difficulty and dissatisfaction in the past has come from wrong ratings or from different measurers obtaining different ratings for the same boat through their lack of knowledge of the rules or lack of experience.

It is not within the province of this article to go further into the method of rating boats under these rules, and I would only say here that, if there is no one in your club capable of measuring the boats properly, you had better not try to race under these rules. It is possible, however, to obtain a measurer from another club, or to obtain the services of a naval architect to measure the boats that want to race, in which case, knowing the rating, the Regatta Committee will only have to apply the time allowance tables. This is easily done, for if one boat rates 30 her time allowance is shown in the table as 350, while one that rates 40 has an allowance of 225. Therefore, the larger boat would have to allow the other boat the difference in their allowances, or 125 seconds for every nautical mile sailed in the race.

In getting a measurer from out of town, it is advisable to have all the boats in the club that may ever want to race measured at the same time, as it can probably be done somewhat cheaper in this way than if a measurer is sent for to measure one boat at a time. Under the present ruling of the A. P. B. A. on racing boats the displacement, instead of being figured, is obtained by weighing the boats, which entails the use of an accurate and delicate scale, which will further complicate matters for the small club. After obtaining all these ratings, remember that the boats are divided into classes according to types.

There are a number of ways of running the actual race. The boats of a certain class may all be started together at a given time (the details of the actual methods of starting, etc., will follow in a later chapter), and their times taken at the finish, at which time the time allowance obtained from the tables may be applied. This method, however, while satisfactory to the participants, does not make a spectacular race, as the first boat in is not usually the winner, and it is not known until all the boats have finished and the allowances are applied just who has won the race.

WHEN BOATS FINISH AS CLOSELY AS THIS IN A CRUISER RACE, THE REGATTA COMMITTEE CAN CONGRATULATE ITSELF ON ITS HADICAPPING

Another way is to figure up beforehand how much time each boat allows every other boat, using the fastest boat as a basis and figuring what she allows all the others and then starting the boats on their handicaps—that is, starting the slowest boat first, following her with the next slowest, etc., the scratch boat being the last to start. In this way the boats would, theoretically, all finish together. As a matter of fact, theoretical speeds do not always hold, conditions of wind and water making a difference in the speed of different boats. Yet by this second method the finish is much more exciting, and the first boat in is the winner, the second gets second place, etc.

READY FOR THE STARTING GUN IN THE OPEN BOAT CLASS

This, in brief, is an outline of the method of racing under a theoretical formula with time allowance tables. These tables are published by the A. P. B. A., and may be had from the secretary of the association, Mr. Morris M. Whitaker, Nyack, New York.

HANDICAPPING ON AN ACTUAL SPEED BASIS.

In many places where it is not practicable to race under the measurement rule just mentioned, it is possible to hold a very satisfactory regatta under what is known as the actual performance basis. The theory of this method is that, knowing the actual speed of each boat in miles per hour, it is a very simple matter to handicap them on this known speed; for instance, if you know that one boat can cover a mile in 10 minutes and another in 9 minutes and another in 8 minutes, it is obvious that the 8-minute boat must allow the 9-minute boat one minute and the 10-minute boat two minutes in every mile of the race. If the race is 10 miles in length, multiply these figures by 10. The only trouble is to know the real speed of the boats.

There are several ways of getting the data as to a boat's speed on which to base the handicaps. One of these is, previous to the actual race, to run the competing boats, one at a time, over an accurately measured mile course, using either shore marks, which are known to be fairly accurate, or between government buoys on a chart, timing them carefully. Be sure to run the boats over the course at least twice, in opposite directions, so as to make allowance for tide, wind, current, etc. Another method is to hold an actual trial race over a course whose length is known accurately, reducing the speed of the different boats in this trial race to the number of minutes it takes them to run one mile.

The trouble with either of these methods is, that when a man knows that his time is being taken for handicapping he is apt not to show the best speed of his boat. This is a matter that cannot be entirely overcome until the racing ethics of the competitors have been raised to a higher standard. Even if a member of the committee is on board the boat during the trial, there are many ways in which the engine can be doctored so as not to show its best speed. About the most you can do is to put a man on his honor to do the best he can—and then formulate some system of penalties or disqualifications for any boat that exceeds in the actual race the rate she made on her timing trials. These can be worked out in some such way as this: If a boat exceeds her theoretical speed in a race by 2 per cent., take 2 per cent. off of her elapsed time in the race. If she exceeds it by 3 per cent., double up the penalty and deduct 6 per cent. from her elapsed time. If she exceeds the theoretical speed by as much as 5 per cent., disqualify her. Variations of these penalties can be worked out to suit individual cases.

Another way to obtain this theoretical speed, where it is not desired to give up a day or a morning to timing the boats, has been tried out by the Hudson River Motor Boat Club and found to give very satisfactory results. The theory of this method is as follows: Plan to run the actual race in three heats around a triangular course of, say, one mile to a leg, although the length of these legs may be varied to suit the requirements of different courses. On the first heat, time the boats for their handicaps on some *one* leg of the course, this leg being unknown to the owners or skippers. As each one will be anxious to win the first heat on account of the points it will give him in figuring the winner of the race, and not knowing on which leg of the course he will be timed for the handicaps, each owner will probably show his best speed on all legs of the course. The data thus obtained in this first heat can then be applied not only to the first heat, but to the subsequent heats as well. It is not necessary to time the boats on the same leg, though it would be best to do so; otherwise, care must be taken to see that tidal and wind conditions are equal on the legs on which the timing is done.

By figuring the allowances in this way from the committee boat at the finish of the first heat, the handicaps can be posted so that in the other heats each man knows his actual handicap. By this method, in starting subsequent races or heats, each boat can be started on her handicap instead of all together, which will make a close and exciting finish. For this method a (Cont'd on p. 308.)

IF INTEREST IS TO BE AROUSED AMONG THE SPECTATORS, SOME METHOD MUST BE WORKED UP FOR MAKING THE BOATS FINISH CLOSE TOGETHER

Hints for the Man Who Does His Own Fitting-Out

How to Burn Off, Caulk, Paint, Varnish and Prepare the Boat for Going Overboard. Advice to the Beginner and Points for the Old Hand to Heed

BURNING OFF

ALONG about fitting-out time it is customary to rush into print with advice to the amateur skipper on how to fit out and put his boat into commission. Although most men who do this work themselves have been at it so long that they know pretty well how to do it in the most approved style, there are a number of newcomers each year who are working hard over their first boat and who are always anxious to get any advice that may help them with the work, which in itself makes these articles of value. Besides this, there is "more than one way to skin a cat," and by that same token even those that have done the work before may find some hints here that will be useful to them, either in lightening the work or turning out a better job.

CLEANING OUT AND PREPARING FOR PAINTING

The first job to tackle, and one that can be started before the cold weather has gone, is that of cleaning out the boat thoroughly, inside and out. The inside cleaning should be done when the boat is hauled out in the fall, but usually it is neglected then and has to be done before painting time. Starting inside, take up the floor boards of the cabin or cockpit and clean out thoroughly the accumulation of dirt and slime in the bottom of the boat that has collected between the frames. This is often a tiresome job, especially if the apertures between the keelson and planking have not been cemented when the boat was built. But it should be done thoroughly to prevent any chance of decay.

In most boats the frames and inside of the plank are not painted. It would be better if they were, especially in power boats, where an unusual amount of muck always collects. However, if this is not done, after the inside of the boat is thoroughly clean, with all limber holes opened up to allow bilge water to drain aft, give all the ironwork, such as floor straps, bolt heads for the outside ballast, etc., a coat of red lead. If there is inside ballast, remove it, whether it is in the form of pigs, slag, or iron junk, scrub it with an old broom and put it back thoroughly clean. If iron pigs or molded iron is used, paint it with a good coat of red lead to prevent rust.

The next thing in order should be the preparing of the outside of the hull for painting. Examine the outside closely, to see whether it needs burning off or whether a mere smoothing up with sandpaper and puttying all the seams will answer. If the paint is chipped in spots, or if there is an accumulation of old coats, it is best to burn it off right down to the wood. Many amateurs shy at this job on account of the time and labor it entails. It requires a blow torch, and, as many amateurs have not used one before, it often results in an unsatisfactory piece of work the first time they try it, the wood being scorched and blackened. Any of those who know how to use a kerosene vapor stove can readily understand the principle of the painter's torch, which works under pressure in exactly the same way as a Primus stove.

In applying the torch, hold it in one hand and direct the flame against the paint until it curls up and softens under the heat, when it can be thoroughly scraped from the wood with a wide putty knife or a scraper held in the other hand. Don't try to work too rapidly, and be sure that you cut down to the wood each time, keeping the flame on the surface until the paint is thoroughly softened. Hardwoods are easy to work over, but cedar is more difficult, on account of its softness and the fact that splinters are frequently raised. There are now on the market paint removers which will often remove paint, if there are not too many coats, about as easily as a blow torch, and many amateurs prefer using these.

CAULKING

Whether or not the boat is burned off, the seams want to be looked over carefully before the paint is applied, to see whether any soft spots are in need of recaulking. You can test the seams with a putty knife or with an ordinary sheath knife, looking for any soft spots that may appear. Frequently the old putty will be cracked and drop out, while the caulking below it is hard and tight; in which case it is only necessary to reputty the seams. A boat does not have to be recaulked every year, and a good job of caulking ought to last four or five seasons.

It will probably be found that most of the seams are hard, only needing puttying; but if the caulking cotton is black and soft, and protrudes from the seam in places so that the knife sinks in easily, it is time to recaulk. To do the job thoroughly, it is best to get all the old cotton out of the seam and clean seam with a knife. If the seam is too tight to be cleaned with a sharp knife, open it by running a caulking wheel along it, or by driving in the caulking iron here and there along its length.

For small boats, cotton caulking is preferable to oakum, as the latter is too coarse. To caulk well, you need a mallet and a couple of caulking irons, or a small caulking wheel made of brass or steel, set in the end of an oak handle, that will roll into the seam. This latter is only suitable for small boats. Drive in the caulking well at the beginning and keep twisting it as you drive it in. For small boats, cotton caulking comes rolled in handy ball form.

If the seams are small and uniform, a long thread of cotton may be twisted and laid along them and then rolled into them with the wheel, so that it is about a quarter or three-eighths of an inch below the surface of the planking. If the seams are large in places, a thin caulking iron should be used, and the cotton, instead of lying in a straight string, should be drawn back to form a little loop, so that more of it can be forced into the seam. Drive it in at several places, two or three inches apart along the seam, finishing it up by driving in all along. After finishing, put plenty of thin paint on the cotton to keep the water out of it, then point seams with putty and white lead, forcing it well in. Don't drive the caulking in too hard, as a number of good boats have been spoiled by stuffing the seams so tight that when the boat goes overboard and swells it forces the cotton out of the seams.

THE PROPER WAY TO USE A CAULKING WHEEL

VARNISHING

The next job in order, before painting the outside of the boat, is scraping her decks and bright work, and spars, if she is a sailboat, and varnishing them. You can't burn the old varnish off, but must scrape down with a flat scraper, the varnish being first softened by a good varnish remover, which is applied with a brush. You can buy this at a paint store ready mixed, or it can be made by dissolving oxalic acid, which can be bought for a few cents, in fresh water, making a saturated solution with as much of the acid as the water will hold. After the varnish is softened, scrape down until the wood is perfectly smooth, and then sandpaper thoroughly with, first, a coarse, and then a fine grade of paper.

Apply the varnish as soon as possible after using the varnish remover, as the oxalic acid will turn the wood black if rained on before varnishing. Several coats of varnish should be applied to do a good job, and each coat should be rubbed down either with very fine sandpaper or with curled hair before the next coat is applied, if you want a high luster. It is often economy to put on a priming coat of shellac, followed by two coats of varnish, as the shellac dries almost immediately, and the wood is thus preserved until the varnish can be applied.

IN PAINTING, BRUSH IN EVENLY. A NUMBER OF THIN COATS ARE BETTER THAN ONE HEAVY ONE

Use only the very best grade of spar varnish for outside work, and in the spring of the year use a slow-drying varnish. The oil in the varnish makes for durability and long life, hence the slow-drying varnish with lots of oil will last longer than the quick-drying varnish, which has lots of turpentine in it. Do not ever attempt to use inside varnish on the outside of a boat.

PAINTING

When the outside of the hull has been prepared and the seams gone over with putty mixed with a little white lead to "point up" all places where the old putty has been broken or where the seams have been recaulked, you are ready to paint. In these days of ready-mixed paints the amateur very seldom mixes his own, as a thoroughly satisfactory prepared paint can be had for marine use. Be sure to buy marine paints and not house paints, and get a good quality, even if you have to pay a little more. Don't "spoil the ship for a ha'p'orth o' tar," or when the summer is half over your boat will look like a "canaler" on the Erie Canal.

You can get all kinds of paint, from a yacht white to a hard enamel paint. The former gives a pure white, dull finish, which can be easily kept clean, as it is flexible and every time it is washed off a little of the paint comes off, leaving a fine white surface, while the enamel paints and other hard-drying paints, while easy to keep clean, flake and crack if the boat is roughly used, and are so heavy that only a few coats can be applied, and the boat must be burned off at least once every two years when it is used. If a glossy finish is desired, and yet not an enamel paint, a light varnish may be mixed with white lead and thinned with turpentine.

If the old paint has been burned off, it will be first necessary to apply a thin priming coat, followed by two or three coats brushed well in and, lastly, a finishing coat. The priming coat should carry about one-third oil and be thinned with turpentine. Three coats at least are necessary, and four would be better. Where the old coats have not been burned off, two new coats on the topsides will be sufficient. A good formula for a finishing coat of white, if prepared paints are not used, is: 50 pounds of white lead, 2 quarts of raw linseed oil, 1 gallon of turpentine and a pint of drier.

In applying enamel paint over old coats, see that the surface is well smoothed with sandpaper, rubbing with the grain of the wood. Then apply one or two coats of enamel paint, as required, allowing at least five days between the coats for the first coat to dry thoroughly. Where the paint has been taken off, apply three coats of white lead and finish up with a coat of enamel, brushing it well out so that it will not show brush marks.

POINT UP ALL THE SEAMS BEFORE PAINTING

For the bottom of the boat a good copper or bronze paint is necessary, and this should be put on after the topsides are painted, taking care to cut in the waterline evenly. Copper paint can be purchased for from two to seven dollars a gallon, the higher prices being for the anti-fouling paints.

BRUSHES

Good work cannot be done unless you get good brushes, and it will always pay the amateur to invest in three or four good ones before starting the job. It will be well to have a brush for every color that is used. For outside work a flat brush is best, from 2 to 4 inches wide, while a 4-inch flat brush should be used for the copper bottom paint. This latter may be of a cheaper grade than the others. A couple of oval brushes are good for corners, etc., or for finishing work, where a beveled edge brush should be used. Two or three small sash brushes should be had for cutting in, etc. A good brush will cost from 75 cents to $2.00, according to size.

When getting a new brush soak it in water for a while so that it will swell and tighten the bristles, keeping them from falling out. After this first soaking do not wash the brush in water, but clean in turpentine and put away to soak in linseed oil, or else, if thoroughly clean, wrap up in paper until used the next time.

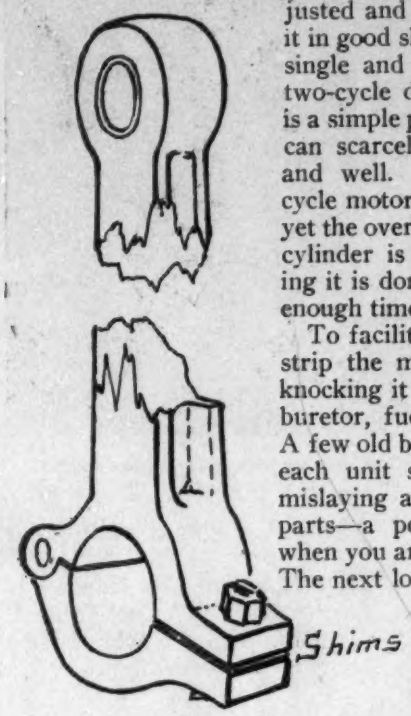
Nearly every man thinks he can paint, but it is usually easy to tell an amateur's job. This is due to the fact that he does not paint evenly, but gives the brush a slap or two in a pot of paint and brushes it on. Where the brush first strikes the surface there will be a thick spot of paint, and when it is empty the paint will be correspondingly thin, because the paint has not been rubbed in and evenly applied. It is better to put on several thin coats than one thick coat, as a better surface will result.

If your decks are canvas covered and you find that they are worn and need replacing, it can be done without difficulty, as canvas can be had in wide widths, so that in boats of moderate size it can be put on without a seam. Remove the old canvas, cut out the new canvas to shape, stretching it thoroughly before laying. Then brush a coat of Jeffery's marine glue over the surface of the wood with a stiff brush, leaving a good body. Lay the canvas in the glue, stretching it tight and evenly to the edges, where it is fastened with galvanized tacks. Then pass a warm flatiron over the canvas to smooth out the wrinkles and make a perfect contact with the wood. This glue will make the canvas waterproof. Then paint with at least two or three coats.

Some Hints on the Spring Overhaul of the Motor

By STILLMAN TAYLOR

THE work of putting the boat into commission should properly include a complete overhauling of the entire craft from stem to keelson, and the power plant should in no wise be neglected at outfitting time. To make the annual overhaul as thorough as possible, it is advisable to take the motor down, that every component part can be cleaned, properly adjusted and any minor repairs made to put it in good shape for the season's work. In single and double-cylinder motors of the two-cycle design the work of overhauling is a simple proposition, and even the novice can scarcely fail to do the work quickly and well. The more complicated four-cycle motor entails some little extra work, yet the overhauling of a four or even a six-cylinder is not a formidable job, providing it is done in a methodical manner and enough time is taken to do the work well.



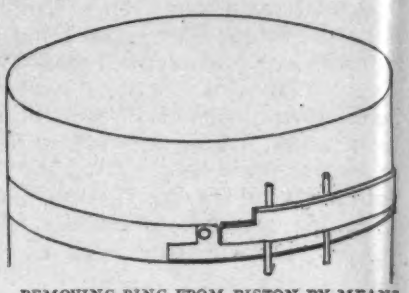
CONNECTING ROD BEARINGS

To facilitate matters, it is a good plan to strip the motor of its accessories before knocking it down, removing magneto, carburetor, fuel and water pipes, and so on. A few old boxes will come in handy to keep each unit separate and prevent possible mislaying and mixing up of the different parts—a point that will be appreciated when you are ready to assemble the motor. The next logical step is to remove the cylinders; and while this is an easy matter in motors of one or two cylinders, more difficulty is encountered if yours happens to be a multi-cylinder cast in pairs or *en bloc*. However, the usual way is to uncouple the pistons at the big or crank ends and lift the cylinder off. The cylinders should be given a thorough soaking in kerosene to soften up the carbonized deposit, or one of the several carbon removers may be used to clean up the bore.

Make it a point to mark each cylinder before it is taken off, and do the same with each piston and its several rings before taking apart. A small file or punch mark is quickly made, and with this guide there is no possibility of making a mistake in assembling. Therefore, mark each part when you are in doubt, and the compression will not suffer when the motor is given its trial spin.

The pistons should be cleaned and the rings removed, that the junk grooves may be cleaned out. The condition of the faces of the rings is a pretty good index of the motor's condition, and if they are not brightly polished and sooty marks are seen across the smooth metal, these "blow marks" indicate gas escaping past the piston, and the worn rings should be renewed. Examine the piston or wrist pin also to see that it is a good, tight fit in its bosses. If found loose, tighten up the set-screw or put in a new pin, if badly worn. Wear in this part may be recognized by the ridges worn on either side of the pin, caused by the rapid reciprocating travel of the connecting-rod.

The crankshaft is subjected to considerable stress and wear, and the bearings should be properly adjusted. Looseness in the bearings due to ordinary wear is easily remedied by inserting a thin piece of sheet brass or copper beneath the bearing and its seat. By inserting or removing one or more of these "shims" the main bearing may be adjusted to the requisite snugness. In case the bearings are considerably worn, new bushing will be needed to obtain a good adjustment, or the bearing may be babbitted. To do this work satisfactorily, the yachtsman should first remove the old metal from the boxes. A core, slightly smaller in diameter than the crankshaft, should then be placed in position and the ends of the box around the shaft sealed up with asbestos cement; fire clay may be used for this purpose. The box must now be heated with a gasolene torch, when the melted bearing metal may be poured in and allowed to cool. Do not attempt to pour the hot metal to fill up a cold bearing, for only failure can result if this is done.



REMOVING RING FROM PISTON BY MEANS OF SMALL PIECES OF STIFF WIRE

When the babbitt has cooled, remove the core and lightly tap the metal with the ball or peane of the hammer to pack the spongy metal. To make a perfect fitting bearing smear a little blueing on the shaft, place the bearing in position and rotate the shaft a few times. Upon removing the shaft you will note that the color has rubbed onto some spots on the bearing and these places must be smoothed up by paring down the metal. Steel bearing scrapers ground to a keen cutting edge and in convenient shapes are essential for doing this work well.

To scrape in the bearing, considerable care should be taken to scrape away but very little metal at a time, and the "blueing" checking-up process must be repeated until a perfectly smooth bearing surface is secured. By using the scraper so that one stroke will overlap the cut first made, a perfectly smooth surface is easily secured. Rough and worn connecting-rod bearings may be scraped in after the same fashion.

In adjusting both the main and the connecting-rod bearings do not make the mistake of setting them up too tight. Slackness in the bearing should, of course, be taken up; but a little play is necessary, and loss of power and rapid wear always result in a pinched bearing.

In motors of the four-cycle type the valves will require grinding so that they may fit their seats tightly and retain compression. This is an easy job if these few hints are observed. Emery is the most satisfactory abrasive for this work, but carborundum, powdered glass and pumice can be used. Only a very fine grinding powder should be used, however, since the object is to polish rather than scour the metal, and nothing coarser than No. 120 Emery should be used. Put a small quantity of emery in a tin cover, add a couple of teaspoonfuls of kerosene and a few drops of some heavy lubricating oil to give it a little more body and to prevent running. Smear a little of this mixture on the face of the valve and also on its seat, insert the blade of a screwdriver in the slot and rotate the valve on its seat by spinning the handle between the palms. A bit brace or drill may be used to rotate the valve by inserting a screwdriver bit in the chuck.

Grinding should be continued until the entire face of the valve and its seat is brightly polished and free from any scratches or pock marks. However, if your valves are in bad shape and require considerable grinding to put them in good condition, some labor may be saved by first dressing off the valve faces with a smooth cut file and finish smoothing up by grinding.

The cam shaft of the motor will probably only require a good cleaning, but in case of breakage or wear in the cams this job should be attended to at once and the work turned over to a good engine builder, since work of this kind demands expert labor. To prevent upsetting the timing of your motor, do not forget to insert the marked tooth of the crankshaft gear between the two marked teeth of the timing gear on the cam-shaft.

At this season look over your electrical plan and replace any worn wires with new. Clean out the commutator with gasolene and lubricate with fresh oil or grease. If you use a magneto,

(Continued on page 308.)

The Portland Yacht Club

Maine's Oldest and Foremost Yacht Club, and One of the Strongest Organizations on the Atlantic Coast. Essentially a Cruising Club, It Has Done Much in Support of Racing. A Power Boat Division One of the Sub-Organizations of the Year

By ALFRED ELDEN

Photos by the Author, F. W. Wardwell, W. B. Jackson, N. L. Stebbins and M. D. Hanson

THE Portland Yacht Club, at the western end of Casco Bay, is the sixth oldest yachting organization on the North Atlantic coast. It had its birth in a pleasure cruise 'way back in 1868, and since then it has consistently grown, both in numbers and in strength, until to-day it stands as the representative yacht club of Maine. Although many notable races and racing men and boats have contributed to the history of the Portland Yacht Club, it is by no means a racing organization. Its enviable position has not been attained through this branch of yachting, but is due to perfectly natural causes; perhaps, I may say, on account of its environment.

The Maine coast is a coast of distances, as every yachtsman who has visited Maine waters knows. Its yacht clubs are few and far between. Along the Massachusetts, New York and New Jersey coasts the announcement of an inter-club regatta means the gathering of the crack racers of half a dozen or more yachting organizations. There are so many clubs and they are separated by such comparatively short distances that large entry lists are easily obtained.

With the Maine club it is a different matter. While it has always held races, and lively ones, too, it is apparent that with no other than its own fleet to draw upon, and the ability of each craft practically a known quantity, any overwhelming racing sentiment is impossible. But the few racing men the club has are thoroughbreds. I will speak of them shortly.

Casco Bay is a natural cruising ground. From the tip of Cape Elizabeth straight across to Cape Small Point is 30 miles. Everything inside an imaginary line drawn between those points is Casco Bay. A look at the chart will give some idea of the cruising radius yachtsmen find in these absolutely protected waters. They can easily pass a week here visiting new scenes daily. Therefore, through environment, it is, perhaps, no more than natural that nine out of ten Portland yachtsmen prefer cruising to racing.

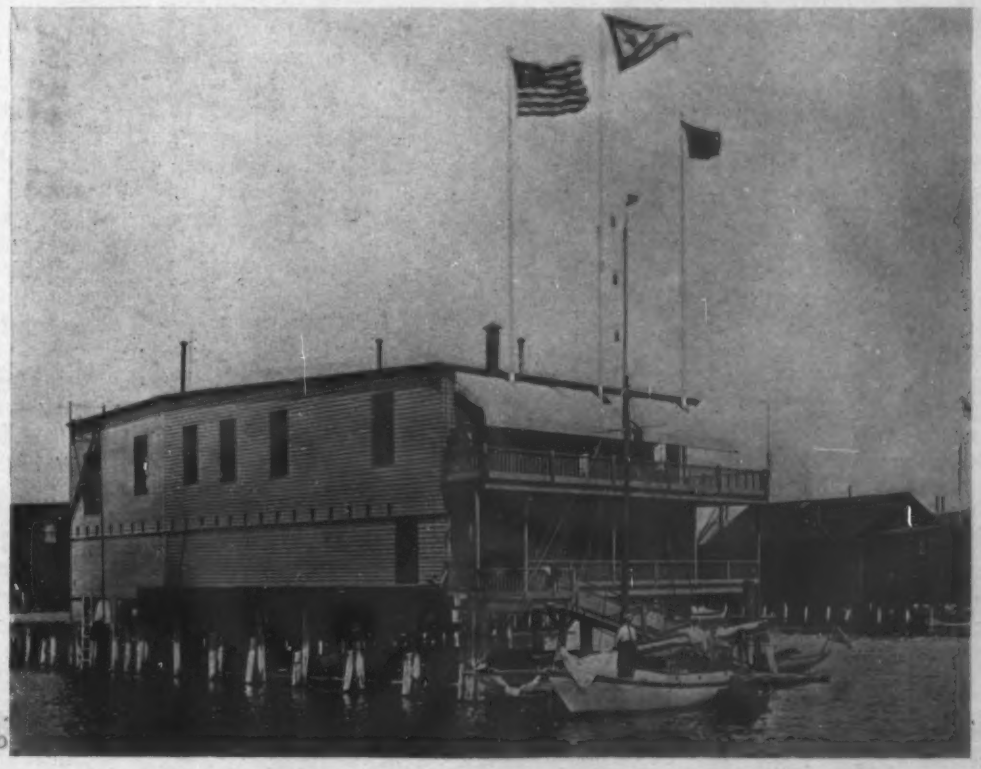
Portland is to-day the first port of call for a majority of the western yachts cruising to Maine waters. It is here that supplies are replenished before continuing to Boothbay, Camden, Bar Harbor, or the hundred and one other famous harbors and yachting centers. Because of Portland's geographic location, then, the most famous yachts in the world are frequent visitors during the season. Dozens of members of the Corinthian, Eastern, Boston, New York and other yacht clubs belong also to the Portland.

In the early years of the club Portland offered fewer attractions than it does to-day. Before electric railroads developed countless summer resorts, before the automobile came to be a plaything and a necessity, outdoor pastime had its limitations. The ocean was responsible for the fortune of many a Portland family. The West India trade, which flourished years ago and made Portland one of the then great seaports of the country, was largely responsible later for making it famous for its retired sea captains and shipowners of affluence. It was no more than to be expected, then, that these or their descendants should take up pleasure boating, and that the yacht club which they formed should set a high standard of sportsmanship and hospitality.

The club has always been particularly fortunate in its selection of officials. There have been less than a dozen commodores during its 45 years of life, which shows that re-elections have not been infrequent. Lack of space, if nothing more, would preclude individual mention of the merits of those club commodores from Commodore Churchill to Commodore Dyer, the present incumbent.

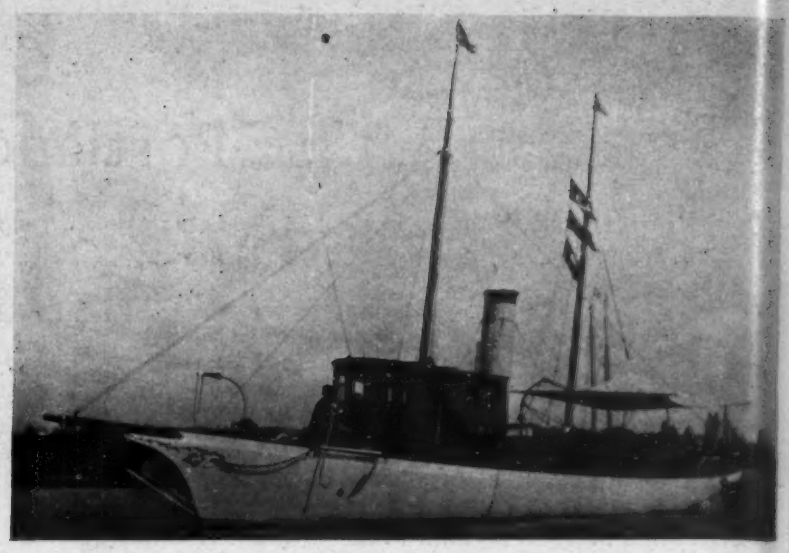
The most prominent living ex-commodore is Dr. Charles W. Bray. He served from 1887 to 1896, again in 1898 and 1899, and continuously from 1901 to 1907. A leading physician of Portland when first elected commodore, Dr. Bray still found time to attend practically all the meetings, to go upon all the annual cruises and many of the lesser events. Always a skilled sailor, his first yachts were sailing craft. During his last years of office, however, he owned the Maitland, a trim little steamer, and, as flagship, this yacht became a familiar sight up and down the Maine coast. She was sold a few years ago to go South, where she met the fate shared by many other one-time pleasure craft--namely, that of being converted into a gasolene working boat.

His successor was Reuben K. Dyer, and he has been re-elected at each annual meeting ever since. In a young man whose love for the sea is inborn through a long



HOME OF THE PORTLAND YACHT CLUB AT THE END OF MERCHANTS' WHARF

DIAMOND COVE, A FAMOUS EARLY RENDEZVOUS OF THE PORTLAND YACHT CLUB. FROM A NEGATIVE MADE THIRTY YEARS AGO



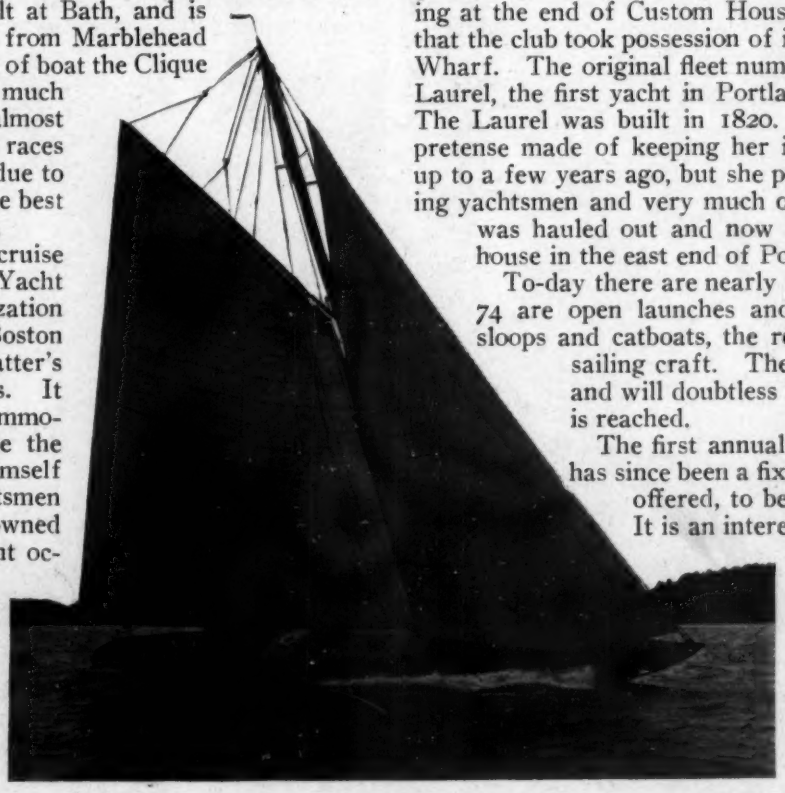
EX-COMMODORE BRAY'S FORMER FLAGSHIP, MAITLAND, WELL KNOWN ALL ALONG THE NEW ENGLAND COAST

line of seafaring ancestry, whose first boat was a raft of planks when he was five years old, and who has felt the call of the salty ocean since he was knee-high to the proverbial grasshopper, the club has indeed an enthusiastic and capable commodore.

Since Commodore Dyer assumed office the club has grown and prospered. The club-house has been enlarged and room provided for a large dining hall, where dinners, smokers and the club's varying social events are held at frequent intervals through the cold months. Situated where from the many windows a view of practically the entire harbor is obtained, the yacht club-house is a winter as well as a summer rendezvous for members, and yachting interest thus is never allowed to flag.

Commodore Dyer and his topsail sloop Clique are a mystery to many owners of more modern racing craft in Massachusetts, and even in New York waters—an enigmatic combination from the reason that each summer they carry off a bunch of prizes won in open competition with craft supposed to be the latest word in yacht designing. The Clique is 23 years old, but Commodore Dyer is satisfied there is no ill omen in this significant combination of numerals. She was built at Bath, and is known to yachtsmen everywhere from Marblehead to Bar Harbor. For an early type of boat the Clique is really a marvelous sailer, but much of the "mystery" about her almost phenomenal showing in the daily races on club cruises and elsewhere is due to the skill of her skipper, one of the best amateur sailors in New England.

There has been but one joint cruise of the Portland and Boston Yacht Clubs, although the local organization has, upon invitation, joined the Boston yachtsmen upon several of the latter's annual jaunts in Maine waters. It was upon these cruises that Commodore Dyer and the Clique made the visitors take notice. He has himself missed joining the Boston yachtsmen but once in the 23 years he has owned the Clique. Upon three different occasions he finished the day's run the first boat of the entire fleet, regardless of class. The accompanying photograph was taken upon one of these occasions when the Clique won the day's run from Hull to Gloucester on the 1907 Boston Yacht Club cruise against a fleet of nearly half a hundred yachts.



THE FAMOUS 31-FOOTER SAYONARA, OWNED BY VERNON F. WEST

Although the Commodore says the Clique does her best in a smashing breeze and with started sheets, that she is a good light-weather craft is apparent from a record she made on another Boston Yacht Club cruise east. The day's run was from Portland to Boothbay Harbor, but with a dying wind the only three boats to finish inside the time limit were the Clique, Shiyessa and Golden Rod. The other cracks of the Massachusetts fleet were out of the running that day.

For the past three or four years Commodore Dyer has taken the Clique to Marblehead Harbor for a few weeks in the summer, lived on board, and sailed with another Portland yachtsman, Vernon F. West, on the latter's crack 31-rater Sayonara. And right here seems to be the place to briefly recapitulate the racing history of the club.

In June, 1868, the owners of ten sailing yachts of Portland made a cruise to Bath and Boothbay Harbor, electing a commodore and a vice-commodore for the occasion. That was the beginning of the Portland Yacht Club. It remained a floating organization until June, 1872, when rooms were secured in a building at the end of Custom House Wharf. It was not until 1885 that the club took possession of its present quarters on Merchants' Wharf. The original fleet numbered ten boats, including the old Laurel, the first yacht in Portland of which there is any record. The Laurel was built in 1820. She was patched up and some pretense made of keeping her in the water near the club-house up to a few years ago, but she proved little of a curiosity to visiting yachtsmen and very much of a care to club members, so she was hauled out and now lies, a decaying hulk, at a boat-house in the east end of Portland.

To-day there are nearly 175 yachts in the fleet. Of these, 74 are open launches and cabin cruisers, 8 are auxiliary sloops and catboats, the remainder steamers and straight sailing craft. The club membership is close to 450, and will doubtless be limited to 500 when that mark is reached.

The first annual regatta was held in 1870, and it has since been a fixture. A silver challenge cup was offered, to be raced for at this annual regatta. It is an interesting fact that this cup has never been lifted from the trophy case at the club-house. In order that it become the permanent possession of any one yachtsman, his boat must win it three years in succession. There are carved upon the cup the names of over 40 yachts and the dates upon which they won a leg of the challenge regatta, but nobody has been able to

ALL THAT REMAINED OF $35,000 WORTH OF YACHTS AFTER THE DISASTROUS FIRE OF FEBRUARY 9. THE TWO ON THE RIGHT WERE BADLY SCORCHED, BUT NOT BEYOND REDEMPTION

bring his yacht thrice in succession across the finish line and thus capture the coveted trophy.

The first name that appears on the cup is that of the sloop Georgie, which won the initial contest on July 4, 1874. The last yacht to win a leg was the Sayonara, on August 20, 1911. She covered the 18-mile course, going over it alone, in 2 hours 15 minutes 38 seconds, beating the nearest record by more than 20 minutes. It was believed the Sayonara would eventually lift the trophy; but she never can, as I will soon explain.

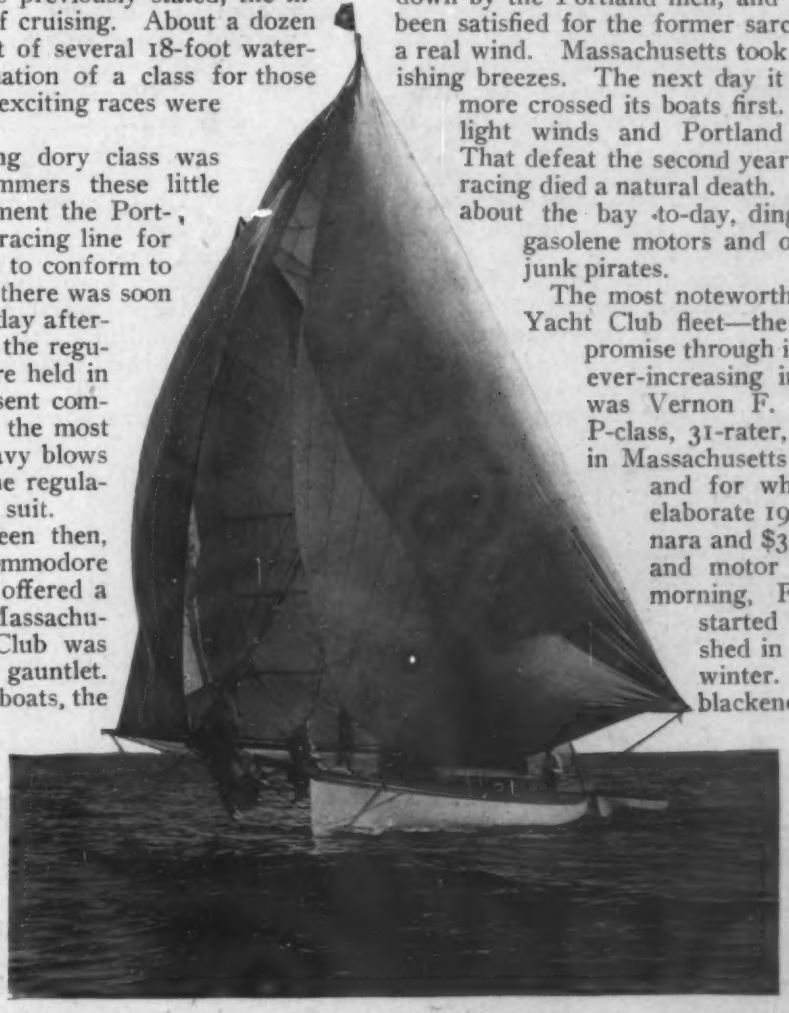
During the early years of the club there were many fine schooner yachts and big sloops in the fleet, racing enthusiasm was high, and regattas were numerous. But, as previously stated, the interest gradually turned in favor of cruising. About a dozen years ago the addition to the fleet of several 18-foot waterline knockabouts led to the formation of a class for those boats, and for three seasons many exciting races were sailed.

Six years ago a 21-foot sailing dory class was formed. For three or four summers these little yachts furnished the most excitement the Portland Yacht Club had had in the racing line for some time. The dories were built to conform to the X class of Massachusetts, and there was soon a fleet of a dozen or more. Saturday afternoon and mid-week races became the regular order of events, and they were held in fogs, calms and blows. The present commodore owned and sailed one of the most successful of these dories. In heavy blows spills were not uncommon, and the regulation racing costume was a bathing suit.

Interest in dory racing was keen then, and when Walter Knight, vice-commodore of the South Boston Yacht Club, offered a challenge trophy for Maine and Massachusetts dories the Portland Yacht Club was quick to accept the proffered gauntlet. There were trials, and finally four boats, the pick of the fleet, were packed on the Boston steamer and shipped to the battle ground. Portland dorymen would like to forget that year 1908. So I will dismiss it by quoting one of the defeated skippers: "Just say they beat us to a frazzle and let it go at that!"

But the next year the Portland men made a better showing. The Massachusetts yachtsmen had been laughing at them and jollying them with such remarks as: "If we ever catch you Maine fellows out in a stiff blow, we'll show you how to sail a dory!" That remark later gave the Portland Yacht Club dorymen about all the satisfaction they were able to derive from those Massachusetts Bay races.

In 1909 they were on hand again, and the first day there was just the sort of a breeze the Massachusetts fellows had been praying for. When I say it was the same nor'wester that greeted the New York Yacht Club on its memorable 112-mile thrash from Pollock Rip to the Cape Elizabeth Lightship I have said everything necessary. The first race in that rip-snorter was won hands down by the Portland men, and everybody felt their honor had been satisfied for the former sarcasms relative to dory sailing in a real wind. Massachusetts took the second day's race in diminishing breezes. The next day it blew again, and Portland once more crossed its boats first. The last two days there were light winds and Portland lost both races and the series. That defeat the second year rather killed interest, and dory racing died a natural death. Some of the craft may be seen about the bay to-day, dingy and battered, equipped with gasolene motors and owned by lobster fishermen and junk pirates.



THE PRESENT FLAGSHIP, CLIQUE, 23 YEARS OLD, BUT STILL ABLE TO WIN PRIZES AGAINST MORE MODERN BOATS

The most noteworthy racing yacht of the Portland Yacht Club fleet—the boat which gave the greatest promise through its performances, of fostering an ever-increasing interest in local yacht racing—was Vernon F. West's Sayonara. This crack P-class, 31-rater, which so distinguished herself in Massachusetts waters during 1911 and 1912, and for which its owner had planned an elaborate 1913 campaign, is no more. Sayonara and $35,000 worth of other fine yachts and motor boats were destroyed Sunday morning, February 9, by a fire which started in a boat shop adjoining the shed in which they were stored for the winter. The flames left nothing but blackened rudders, bent piping and gasolene tanks, twisted skegs and snarled wire rigging of fifteen or more sail and motor yachts. The mortuary list included the West flyer, the 40-foot cruiser Question, a photograph of which appeared in a recent number of YACHTING; Rear-Commodore Day's handsome cruiser Davy Jones, the raceabout L'Aiglon, the sloop Mildred and other craft of lesser value and fame.

EX-COMMODORE CHARLES W. BRAY

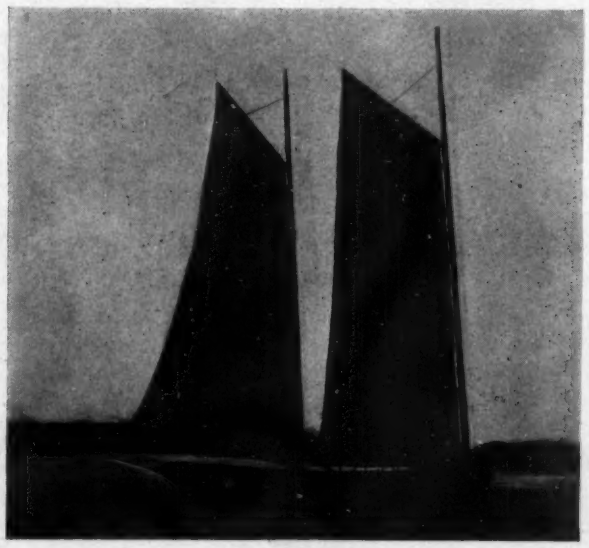
COMMODORE REUBEN K. DYER

REAR COMMODORE HOLMAN F. DAY

The Sayonara was built at East Boothbay from designs by George Owen, of Boston, and was one of the best from the board of that well-known designer. On June 24, 1911, Sayonara started in a fleet of six P-class boats in the Corinthian Yacht Club's 95-mile night ocean race. She won in her class, finishing nearly two hours ahead of her nearest competitor and also finishing second out of the entire fleet of 22 boats. The famous ocean-going racing schooner Venona was the first across the line, and she was but little more than an hour ahead of the Sayonara. A few minutes past 1 o'clock Sunday morning the Portland 31-rater led the entire fleet around the stakeboat off Wood End bell buoy. The timers shouted through the darkness for her name. They asked three times before they could believe it, and then out of the gloom a sepulchral voice sounded: "For the love of Mike! Where in thunder are the rest of 'em?"

At Marblehead, on July 1, in the open regatta of the Eastern Yacht Club, Sayonara finished but two seconds behind George Lee's Italia. She was one of the four P boats selected to race at Manhasset Bay for the challenge cup. She finished fourth in the series, but the Massachusetts yachtsmen entered protests, because of an alleged violation by the New York defenders of the reverse curve measurement clause in the racing rules. Sayonara was finally awarded second place. Regardless of protests, the Portland boat finished first of all the New England challengers and made a remarkable showing. She was pitted against the pick of the New York and Massachusetts boats, which were sailed by men and crews who knew every trick of the tide and the winds in those waters. Mr. West was handicapped because of his inability to obtain a regular crew, as he might have done at home. He demonstrated, however, that his boat was one of the best in her class, particularly dangerous to an opponent in a heavy wind. In 1912 Sayonara repeated her first year's good work, consistently winning places in races and bringing back to Portland at the end of the season a number of trophies.

It is gratifying to learn that, following the loss of the Sayonara, Mr. West at once decided to have a new boat, which will be designed and built by the designer and the builders of Sayonara. While she will be a P-class boat, the new craft will be more of a boat and will have a larger sail plan. It is a rush order, and Mr. West hopes to yet take his share of the 1913 trophies.



LAUREL, BUILT IN 1820. AN OLD MEMBER OF THE PORTLAND YACT CLUB FLEET AND THE FIRST YACHT IN PORTLAND HARBOR

So rapidly has interest in the motor boat end of yachting developed that the Portland Yacht Club has followed the initiative of the Boston Yacht Club and formed a power boat division. At a recent meeting Major Holman F. Day, a Maine author of note, was elected to head this branch with the title of Rear-Commodore, subject to the general orders of the Commodore. He was the former owner of the Davy Jones, or the owner of the former Davy Jones, as you like. Incidentally, he will replace his craft with a bigger and better cruiser.

Commodore Day is an enthusiastic yachtsman, spending a good part of the summers aboard ship. The power boat division will be conducted under about the same rules and regulations as those which govern the recently created power boat division of the Boston Yacht Club, the success of which was recently described at length in YACHTING.

In a nutshell, good-fellowship, absence of discordant factional elements, cordiality toward visiting yachtsmen, a never-flagging effort to keep the membership list clean, frequent club runs and exceptionally beautiful waters for cruising and for regattas, may be considered the chief factors in the success of this, Maine's biggest and best yacht club.

The newly created power boat division promises to play an important part in the future advancement of the Portland Yacht Club. Arrangements have already been made to hold week-end runs to such points in Casco Bay as will appeal to owners of both large and small boats. Joint outings with the fleet of the Portland Power Boat Association have also been planned. A uniform system of code signaling is being perfected, and there will be practice runs early in the season for the purpose of experimenting with these signals until all power boatmen become proficient in their use.

Yachting interest is unusually keen this spring, and the coming season promises to be the most eventful in the history of the club, both in the sailing end and the power boat side of the sport. The cry that interest in yachting is lagging on account of the many new shore distractions is not borne out on the New England coast, especially as to the Portland Y. C.

A Plain Talk on the Compass

Part I: Mechanical Defects in the Compass and How to Overcome Them

By ALFRED D'A. McNEVIN

"True as the needle to the pole,
Or as the dial to the Sun."
—Barton Booth.

THE sentiment expressed in these lines is very pretty, but the conditions essential to its fulfillment have not been satisfied by the present-day compass.

Quite true with respect to the sun-dial; but the mariner's compass needle, in its present stage of development, can hardly be used as a token of fidelity. There is nothing so erratic, nothing so deceiving, and at the same time nothing so indispensable to the mariner, be he cruising or sailing for pleasure or profit. Nothing is more susceptible to evil influences which may lead it away from its natural path in the course of true direction.

Do not place implicit confidence in your compass, no matter how carefully it may have been adjusted. Such confidence is forbidden by the regulations relating to the examination of masters and mates in the mercantile marine of Great Britain.

Instrumental defects and errors arising from causes other than the magnetic influences in the boat have been the cause of many losses that have been attributed to other sources of error.

The records of the Commissioner of Navigation of the Department of Commerce and Labor and the frequent accounts of disaster to shipping in the daily press will show to what a great extent the compass is directly responsible for the large loss to life and American vessel property alone. Foreign nations suffer their share also; no class of vessels, from the largest steamship to the smallest craft using a compass, is exempt from danger incident to compass errors.

Yet the compass is the only guide, and is pre-eminently the most important of all instruments in a ship's equipment, and, at the same time, is often the most neglected. As a rule, it is bought "like a pig in a poke" and treated with as little consideration thereafter. This lack of proper consideration and attention is, no doubt, due to the supposed mystery which surrounds it and the fact that a compass adjuster is generally looked upon as a corrective agent for all ills which beset a compass, regardless of its age, the way it is handled and its treatment aboard the ship.

The fact that a compass is right out of the shop is no guarantee that it is and will remain in good and proper working order, regardless of whose make it is or what style it may be; both spirit and oil compasses are alike in this respect and are subject to instrumental defects. Old compasses are more apt to be erroneous than new ones, because some of their essential parts wear out and deteriorate with age, and their action becomes impaired from this cause.

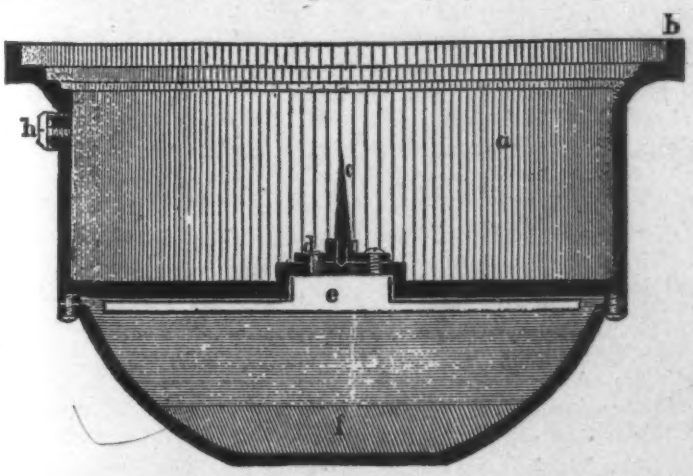
Unquestionably the best practical remedy for compass errors of all kinds is to be found in a careful captain. How to enlighten amateur skippers who may be a little heedless, or who do not realize the importance of proper compass regulation, is the object of this article. Recreation and danger are not analogous situations. They do not go very well hand in hand, and to get the full measure of enjoyment out of your cruise that much-desired sense of security must be continually felt.

INSTRUMENTAL AND MECHANICAL DEFECTS

The importance of compass defects and the means for their detection cannot be overestimated. The errors of adjustment, even when quite large, are at least of a comparatively fixed character, and when once definitely ascertained can be properly recorded and allowed for. Instrumental defects cannot. They are mechanical, and the remedy must be mechanical. A raveling on the edge of a compass card might go unnoticed in a heavy sea, or under conditions of sailing where there is sufficient movement and vibration in the boat to keep the card free; but should a protruding thread cling to the bowl and either retard or stop its movement, much trouble might result. This has happened frequently, and once, to the writer's knowledge, with disastrous results.

It is a fact that compasses work better in a sea-way than in a smooth sea; one reason for this is that the card cannot adhere to the bowl by a raveling or otherwise and remain deflected from the magnetic meridian, as the motion of the boat permits it to break away from its attachment of its own accord.

One of the commonest expressions made use of by the man at the wheel is, "This compass is slow." At the same time take a glance over the stern at the wake of the ship: it is as crooked as a rail fence, which means a considerable waste of fuel and loss of



Sectional view of a liquid compass: (a) compass bowl; (b) rim of bowl; (c) pivot; (d) hole connecting bowl with expansion chamber; (e) expansion chamber; (f) false bottom of bowl, with lead at bottom to give stability to bowl; (g) glass cover; (h) side filling hole; (i) knife edge supports upon which bowl rests in gimbals.

time in the course of events. You will, perhaps, hear the captain, when he sees the wake, "bawl out" the quartermaster for bad steering. The quartermaster is not to blame; the compass is "slow," true enough. The captain or owner should have had it tested to determine its condition. In all probability it is out of order, and thus a menace to the ship.

It is not an uncommon sight to see the helmsman kicking the binnacle, jerking the compass with a string attached to its gimbals, rocking it with his hand, and performing all manner of tricks to "liven it up." All remedies of this kind are of no avail, except, possibly, for immediate and temporary relief. They may break it loose from its attachment for the time being, but as permanent correctives for a slow compass they have no value. Examine the compass, or have it examined, if you notice this fault, and remove the cause.

Besides the raveling complaint there are others of a mechanical nature, and, on the theory that "no chain is stronger than its weakest link," they are all equally as important to the workings of an efficient compass. The efficiency of a compass may be summed up and embodied in a positive rule—viz., that the power of the magnetic needle, or magnetic system of needles, be of sufficient strength to hold the card in its proper place in the magnetic meridian, and the mechanism of the other parts of the compass must be such as to permit them to obey their natural impulse to point in the direction of the magnetic north. A compass with weak needles or any other mechanical imperfection cannot perform its functions properly.

The fundamental requisites absolutely essential to its reliable action are: magnet power, sensibility and steadiness; and the desired results cannot be obtained by one without complete perfection in the other. The best needle ever conceived could not carry a heavy card with alacrity in thick, murky or frozen liquid, or suspended by a cracked agate on a dull pivot, or under numerous other conditions which we will mention.

The magnetic power of the compass card should be as great and as permanent as can be realized by the careful formation of the card magnets, and, to this end, the greatest care should be exercised during every process of their manufacture: mounting, and also in the selection of the steel with which they are made. Magnetic permanency cannot be induced in any but the best grade of magnet steel—an article especially compounded for this purpose.

Mechanical compass errors may be separated into two classes—visible and invisible errors. The visible errors are such as can be plainly seen by the naked eye, but the invisible errors require a special investigation for their detection. Ravelings, for instance, are of a variety that cannot be seen without the aid of a microscope. When wet, the fluffy, fibrous threads are not visible in the liquid to the naked eye.

Here is a list of the defects to be guarded against: Invisible ones—touching; blunt pivot; cracked or holed agate; improper mounting of card on needles; the north and south line of the card not being parallel to the true line of direction in the needles; loss or diminishment of magnetism in the needles; wrong kind or wrong proportion of liquid; unbalanced and heavy card, due to leaky central buoy or needle tubes; an improper adjustment of the weight of the card to the density of the liquid; misplaced lubber line, etc., etc.

Visible defects are: Bubbles (caused by air getting in the liquid, due to leakage); sediment; turbid liquid; discolored card and bowl; imperfect balance of bowl on gimbals; motion of bowl not free; leaky bowl; undue amount of play, permitting the bowl to slide in its gimbals, thereby displacing the bowl with respect to the compensating magnets in the binnacle.

"Touching" is a very serious source of error; it relates to the space between the underneath surface of the glass cover and the highest point on the compass card, causing the card to rub against the glass and hang in a deflected position with relation to the magnetic meridian. It is the chief point considered in the examination of naval compasses. To determine whether the card is touching or not, spin the bowl, and if the card remains at rest it is "touching." If there is no friction it should swing with the bowl. Friction is caused by the top of the card and the glass cover of the bowl coming in contact. The card is either too light or the liquid is too dense.

To remove a "bubble," remove the false bottom and place the compass on its side with the filling hole up; take a few turns out of the screw in the filling hole, enough to let the air out, and, with a gentle pressure on the expansion chamber, force the bubble out and then tighten up the screw in the filling hole to its full due. (See sectional cut of liquid compass.) If the bubble reappears after a few operations of this kind, the bowl is probably leaking, or the compass needs new packing.

Exposure to excessive cold or heat ruins a compass; below zero temperature especially has a damaging effect, both during that period and afterwards. It either cracks the expansion chamber or displaces or breaks the glass cover, and also, by cracking the mica base of the compass card, ruins the free and easy movement which it should possess. Good direction cannot be expected of a distorted, ragged card, frayed at the edges.

Mechanical defects in a compass had best be overcome by taking the compass to an instrument shop or compass maker.

Every compass has its vibrational period—its period of swing or magnetic moment—by which its invisible complaints may be detected; as they are more or less than normal, so they indicate its condition and trustworthiness. Herein lies our safeguard. To obtain the data for testing a compass as to its magnetic power, sensibility and steadiness, compasses are to be moved out of the influence of magnetic masses, and each compass, while under trial, separated from all the others; compasses aboard ship must be taken ashore for these observations.

The observations may be made in the following manner: To determine a suitable location, set up a compass and its azimuth circle on a tripod, and a staff about 50 yards distant from it; observe the bearings of the staff; interchange the positions of staff and compass, and observe again; repeat these observations on a line nearly transverse to the first one; then the direct and reverse bearings on each line should differ 180°; if they do not, select a place where such difference will be found. This precaution must be taken to make certain that there are no "local attractions" at the place where the observations are being made.

For sensibility: Set the keel line of the bowl at the 0° mark of the compass card, and, by means of a magnet or piece of iron, gently draw the card about 2° to the right and observe with a magnifying glass the reading of the card when it returns to rest; then draw it to the left about 2° and observe, as before. Set down all the readings, estimating them as closely as possible.

For time of vibration: Set the keel line at the 0° mark of the card, draw the card to the right one point; as it swings back, note the instant of 0° first passing the keel line, and again its second passage of that line (in the opposite direction). Repeat this observation, drawing the card one point to the left. Should the 0° mark of the card stop short of the keel line when approaching the second transit, note the arc it is short of it. It is essential that both needle and liquid be at absolute rest before each series of observations is begun.

Form for entering records of observations:

Sensibility	*Right*	*Left*
	° ′	° ′
Reading before disturbed		
After, when at rest.....		
Difference		

Time of Vibration	*Right*	*Left*
	m s	m s
Time of 0° first passing keel line.....		
Time of 0° second passing keel line....		
Difference: time of vibration.....		

The following is the approximate time of one vibration of the compass card at the corresponding temperatures:

Temperature	10°	20°	30°	40°	50°	60°	70°	80°	90°	100°
7½" compass, time, sec..	26	24	22	20	18	17	16	15	14	13
4" compass, time, sec....	17	16	15	13	12	11	10.5	10	9	8.5

(To be continued.)

The Pinkey—A Rara Avis

By D. A. WASSON

NOAH WEBSTER, the orthographic Bowditch, says that a yacht is "a vessel used for pleasure." That being so, I beg to present for enrollment in Lloyd's Register the names of the ancient schooner "yachts" Mary, Rear-Admiral Robert E. Peary, and Eagle, Capt. J. Templeman Coolidge. Incidentally, they will steal some of the America's thunder; but, as the Admiral's friend Cook once magnanimously remarked, "There is glory enough for all." So I shall go ahead and boost my candidates. Stranger craft have been called yachts ere now.

The Mary and the Eagle owe their latter-day prominence mainly to the fact that they are pinkeys, and that pinkeys at present are almost as scarce as yards on a fore-and-after. To modify, they may be counted on the fingers of one hand, provided you have an extra finger. Admiral Peary and Mr. Coolidge bought them to keep alive a vanishing type; to satisfy whims; for their own pleasure; *ergo,* they are yachts.

What is a pinkey? If I could resurrect a Cape Ann fisherman of a century ago I would back him to answer the question best, for the first pinkeys were the first Gloucester fishing schooners, built on the shore of Chebacco Pond, Essex, and originally known as Chebacco boats. The pinkeys were the little packets that first made Gloucester the greatest fishing port in the country. Therefore, our ghostly mentor would be apt to know what he was talking about. But, none of his ilk being available just at this minute, I'll try to define a "pink" myself.

The archaic Simon-pure pinkey had a blunt apple-bow, a sharp stern and high bulwarks which came up gracefully aft and ended in a peak several feet outboard from the stern-post. Within their protecting sweep the helmsman was as safe from toppling crests as on the mountainous poop of a Spanish galleon. For that matter, her whole crew was as secure in the dirtiest breeze that ever lashed the tide-ripped Banks as if they were inside a mammoth can-buoy. The long-legged little hookers were sea-boats to pin your hopes to—dryer indeed than their clipper-built successors of to-day, but not the thing in these hustling days when dividends depend on getting to market first. As for rig, the first pinkeys had no bowsprits, and their foremasts were way up in the eyes of them; their rudders were hung "out-of-doors," and they steered with a tiller. This was a pinkey.

To be sure, there are several hybrid little schooners on the Eastern coast and in the Maritime Provinces which aspire to the title pinkey; but, as a matter of fact, they are no more like pinkeys than the bugeye and pungie of Chesapeake Bay, and this is saying much. When an innocent bugeye yacht invaded the Maine coast a few summers ago there arose from the pier-head navigators such a scornful clatter of tongues as had not been heard since A. Green Hand of the sloop yacht Emerald let go his anchor into the bight of the jib and didn't know anything about it till she had drifted peacefully ashore. They thought the bugeye was an abortive attempt at a pinkey.

One of these pretenders is the Ellwood, of Lubec, Me., built there only five years ago and fitted with two gasolene engines for the fishing business. Another is the auxiliary E. F. Gamage, of New Haven, built at Boothbay in 1873. Both would make very respectable pungies, but resemble pinkeys only in having sharp

TYPICAL PINKEY STERN, SHOWING CROTCH FOR MAIN BOOM

sterns. Having bowsprits cannot be held against them, for these appendages were adopted early and the foremasts stepped further aft. Even the ancient Mary and Eagle are not bowspritless.

When Admiral, then Commander, Peary bought the Mary of a St. George lobster catcher in 1907, he wanted to preserve the type mainly; but he got a doubly valuable prize. There is only one merchant vessel under the American flag older than the Mary, and that is the famous Polly, built in 1805. The Mary, a mite of eight tons, was launched at Portsmouth, N. H., in 1811. In the best of condition, and enjoying an existence of elegant leisure at her owner's summer home on Casco Bay, Me., the Mary bids fair to outlive her distinguished "skipper." Both have earned a long vacation, it is agreed.

The Eagle, 21 tons, was built at Duxbury, Mass., 77 years ago; but for many years was owned at Swan's Island, Me. Ten years ago she came into Portsmouth harbor on her annual fall pilgrimage from her home port to Gloucester with a load of dry fish. Mr. Coolidge, a wealthy summer resident, took an immediate shine to the ancient craft, and for her paid her tiny crew a price which sent them on their way rejoicing. Since that time she has been hauled high on the shore in front of her owner's summer home at Newcastle, N. H. Her chubby sides are always freshly painted. but the dim legend, "Eagle, Swan's Island," is allowed to fade no more. Her gloomy interior is converted by modern portholes and many tasteful "fixings" into a cheerful retreat, which loses no charm for being ribbed with timbers and massive oak deck beams of a size never seen to-day in vessels of her tonnage.

One of the best-known of the Maine coasting fleet—and, by the way, the quaint pinkeys have been indigenous to the Maine coast since the Cape Ann fishermen discarded them—is the Maine, of 24 tons. The Maine, of course, began her career as a fisherman, having been built at Essex in 1845. She represents a disappear-

DECK OF PINKEY SUSAN, BUILT 1820; WRECKED 1908

PINKEY ELIZA ELLEN, ONE OF THE LAST OF HER TYPE

THE PINKEY MAGGIE, STILL IN EXISTENCE AND HAILING FROM BOOTHBAY

A SMALL UNNAMED PINKEY, STILL CARRYING CARGOES OF FISH

ing type just as much as her aged skipper and owner, Capt. Stewart of Southwest Harbor. For a time he had a gasolene "kicker" in her, but last summer took it out. At best, it was an anachronism in a 67-year-old schooner with a captain considerably past that modest age. Forty-odd years ago the doctors told Capt. Stewart he was in consumption. To-day one rarely finds a heartier old sea-dog. He laughs at doctors now, as, luckily, he did then.

Many thousand quintals of cod have the Maine's bulky holds brought home from the Banks, but of late years she has been freighting about Penobscot Bay. Most of her old sister craft plied the vocation of "fish-killer" to the last, unless—be it whispered—in their dotage they sank to the indignity of becoming "rum-boats" on the Prohibition Pine Tree coast. One of them did neither, but went into the Rockland lime trade and was burned at Portsmouth, thus meeting the usual fate of the lime carriers, but sounding, as it seemed, a warning against further violation of tradition. She was the Uncle Sam, and her hull to-day reposes on the flats between two coal wharves at that port, with a flourishing growth of sedge grass on her half-sunken decks.

The little pinkey Freighter, of Lubec, is an exception, in not having been built for fishing, as her name implies. The 8-ton midget has spent most of her days in carrying microscopic general cargoes between ports on the Eastern Maine coast. In late years, with the lessening demand for small coasters, she has become a fisherman. The Freighter boasts a long flying-jibboom, and thus calls a double meed of attention to herself. I saw her beating out of Boothbay harbor a few years ago in a brand-new coat of paint and sporting more stripes than a Sing Sing "lifer." She was built at Boothbay in 1856.

Another surviving pinkey, the Maggie, is a small, undocumented craft, and, consequently, of pedigree not accurately traceable. 'Longshore talk has it that she was built in Nova Scotia, and is a far more youthful craft than her sisters. She hails from Boothbay Harbor, and is engaged in fishing and lobstering along the coast. The tiniest specimen of the type has neither name nor government register, and makes her headquarters at North Haven, in Fox Island Thoroughfare.

Within a comparatively few years several patriarchs have gone out of existence and brought the pinkey still nearer the status of the dodo. The Julia Ann, of Deer Isle, built in 1819, was one of the Maine coast landmarks till she succumbed to old age; likewise the Xylon, of Machias, and the Rainbow, of Swan's Island, whose ages were unknown by the "oldest inhabitant." The Susan, built in 1820, made her annual fall trip to Gloucester with dry fish, returning home with apples, till she was wrecked on the Maine coast in 1908. The Metamora, of New Harbor, was wrecked at that place 5 years ago after parting her cables in a gale, with nobody aboard. She was built in 1834, but was kept slick as a whistle. The date of her launching was cut on the peak of her stern. The Eliza Ellen, of Southwest Harbor, passed in her checks three years ago at the callow age of forty.

The Month in Yachting

REJECTION OF THE CHALLENGE FOR THE AMERICA'S CUP

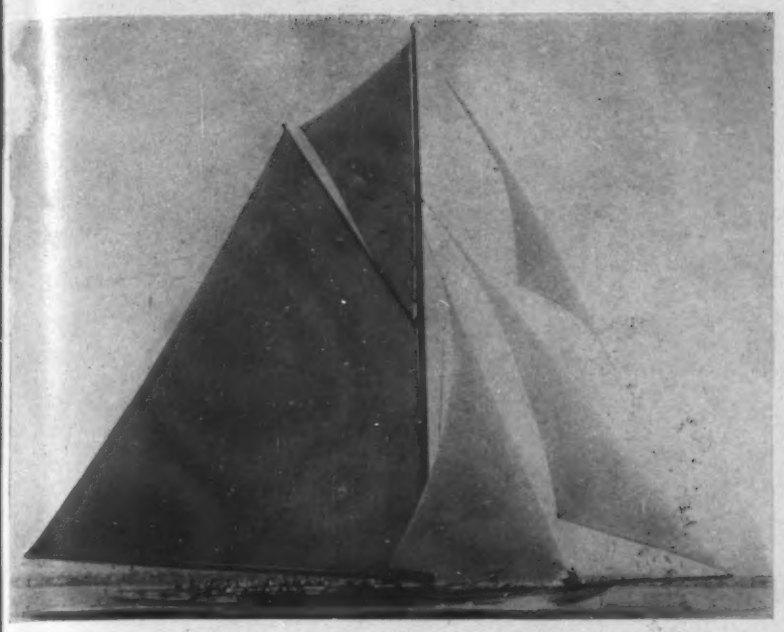
THE most important happening of the month in the yachting world has undoubtedly been the challenge of the Royal Ulster Yacht Club on behalf of Sir Thomas Lipton for a race for the America's Cup. Although at first the terms of the challenge were not made known, it was hoped by the large majority of American yachtsmen and laymen that 1914 would see another struggle between America and England on the historic Sandy Hook course. But at a special meeting on March 12 of the New York Yacht Club, holders of the Cup in trust, the text of the challenge was made public, and the club formally rejected it on grounds which, to those in control of the club's racing affairs, seemed good and sufficient.

The challenge was in regulation form, and the challenger dropped his former request for a race under the club's present racing rule (the Universal Rule), which was the stumbling block to his last challenge in 1907. One clause, however, made it possible for the New York Yacht Club to reject the challenge as it read. Sir Thomas Lipton named a 75-foot waterline cutter as the challenger, and stipulated that the Cup be defended with a boat of not over this waterline length.

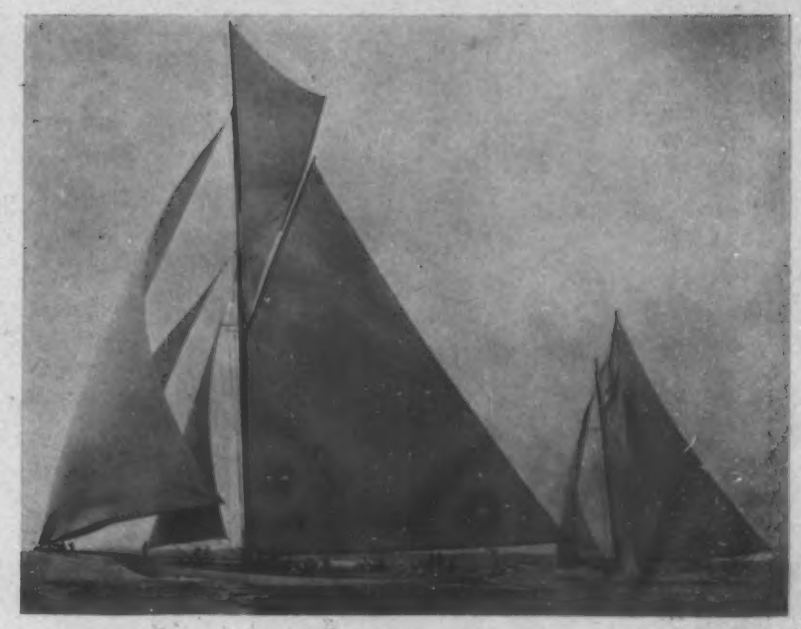
The deed of gift of the Cup says on this point: "The competing yachts or vessels, if of one mast, shall be not less than 65 or more than 90 feet on the load waterline." There is nothing here to prevent the New York Yacht Club defending with a 75-foot waterline boat if it sees fit. Yet it rejected the challenge because, under the wording, it was restricted as to the size of the defending boat.

Now, the New York Yacht Club was within its rights in declining on these grounds. Let that be understood at the start. No one can deny this, and Sir Thomas Lipton made a fatal mistake in putting in the stipulation, as it is probable that, if it had not been made and the challenge had been accepted, the club would have defended with a boat of approximately the same size as the challenger, and would not have risked giving the time that would have been necessary if it had raced a 90-footer against a 75-footer. The Irish Baronet should have known this, and should have been familiar enough with the terms of the deed to have complied with them explicitly if he wanted the challenge accepted.

Be that as it may, there is no question but that the majority of yachtsmen and sport lovers throughout the country will feel that the New York Yacht Club has shown a strong disinclination to race for the Cup and is looking at the matter in a technical rather than in a sportsmanlike manner. It will be hard to convince the average man, who feels that the Cup is merely being held by the New York Yacht Club in trust for this country for fair competition, that the technicality on which the challenge was declined was a sufficient excuse for failure to defend; and the further claim of the club that a 75-foot waterline sloop is not in keeping with the dignity of an America's Cup race is likewise apt to be unconvincing, as a difference of 15 feet in boats of this length is a distinction between what is worthy and unworthy of



SHAMROCK III, SIR THOMAS LIPTON'S DEFEATED CHALLENGER OF 1903



RELIANCE (TO WINDWARD) CARRYING AWAY TOPMAST IN TRIAL RACES AGAINST COLUMBIA

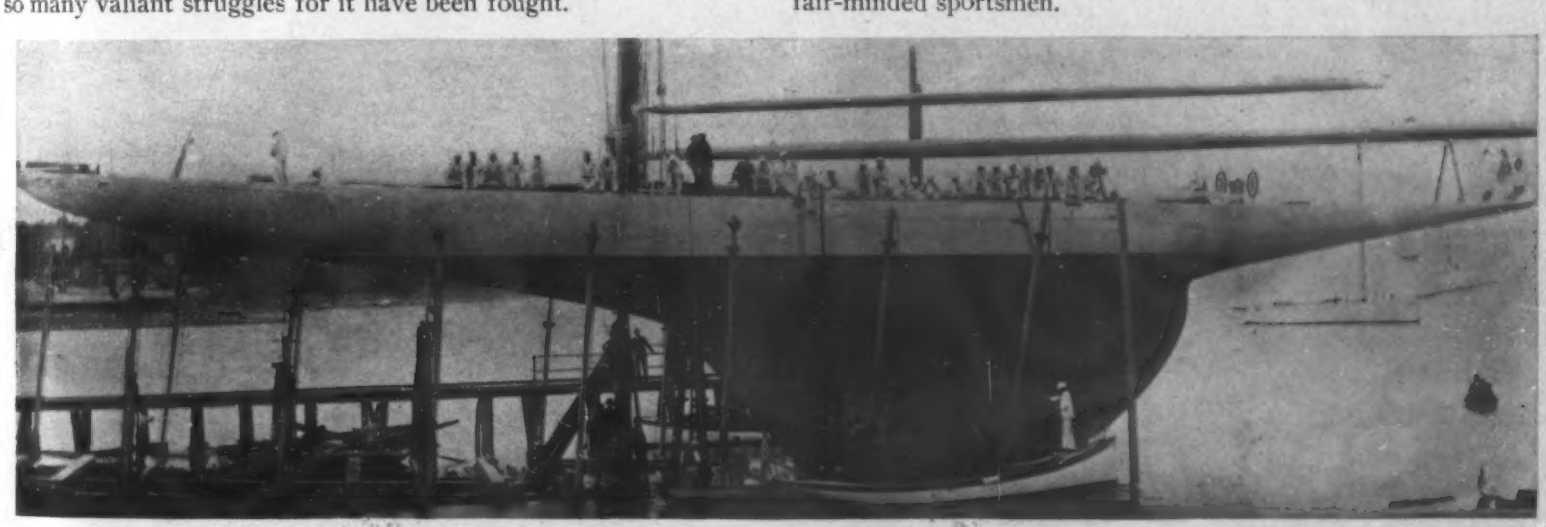
a race which is so insignificant as to seem like splitting hairs.

The terms of the challenge were fair—as fair as they can be to the challenging craft under the deed of gift—and the great mass of people believe that the Cup stands for competition.

The terms of the deed of gift are, in the nature of things, not altogether fair, and, as at present interpreted, impose too much of a handicap on the challenging vessel. In the past the New York Yacht Club has been entirely ready to waive or stretch certain restrictions that seemed to mitigate against a challenger, and in the last few contests has acted in a more than fair and sportsmanlike manner in the concessions it has made. But if it is now going to abide by the letter of the deed and not the spirit, the Cup so hardly won by the old America might as well be taken down to the Hook and dumped overboard in the waters where so many valiant struggles for it have been fought.

The New York Yacht Club has not yet intimated whether it would insist on racing under the old measurement rules, which it can do under the "mutual consent" clause in the deed, unless the challenger wanted to build to the limit of length and race with no time allowance. There are good grounds, however, for believing that they might and would sail under the present Universal Rule; but until this is *known* the challenging boat stands a chance of having to meet a 90-foot trussed "scow" which can carry enough sail on the waters off Sandy Hook to preclude the possibility of a foreign-built boat having a "look in."

We are holding no brief for Sir Thomas Lipton, and are not censuring the present holders of the Cup as to their interpretation of their rights in the matter. We are only pointing out the way their refusal to race will be apt to appeal to the majority of fair-minded sportsmen.



WHAT LIPTON IS TRYING TO GET AWAY FROM—A FLAT HULL WITH SMALL DISPLACEMENT, EXTREME ENDS AND PRACTICALLY A FIN KEEL,

WHAT A REAL HURRICANE CAN DO. WRECKAGE ON THE WATERFRONT AT PENSACOLA, FLA., AFTER THE HURRICANE OF SOME YEARS AGO

VESSELS DRIVEN HIGH AND DRY AT PENSACOLA BY THE FORCE OF WIND AND SEA

ALONG THE DOCKS AFTER THE WIND SUBSIDED. NOTICE THAT VESSEL AT LEFT IS SUNK

EVEN A SNUG BERTH WAS NO SAFEGUARD FROM THE HURRICANE'S FORCE

SOME WEATHER WAS EXPERIENCED ON THE TRIP FROM THE MAINE COAST EARLY IN FEBRUARY

Adventuress, a Whale Hunting Yacht

By GEORGE STORY HUDSON

Photos by courtesy of B. B. Crowinshield and the author

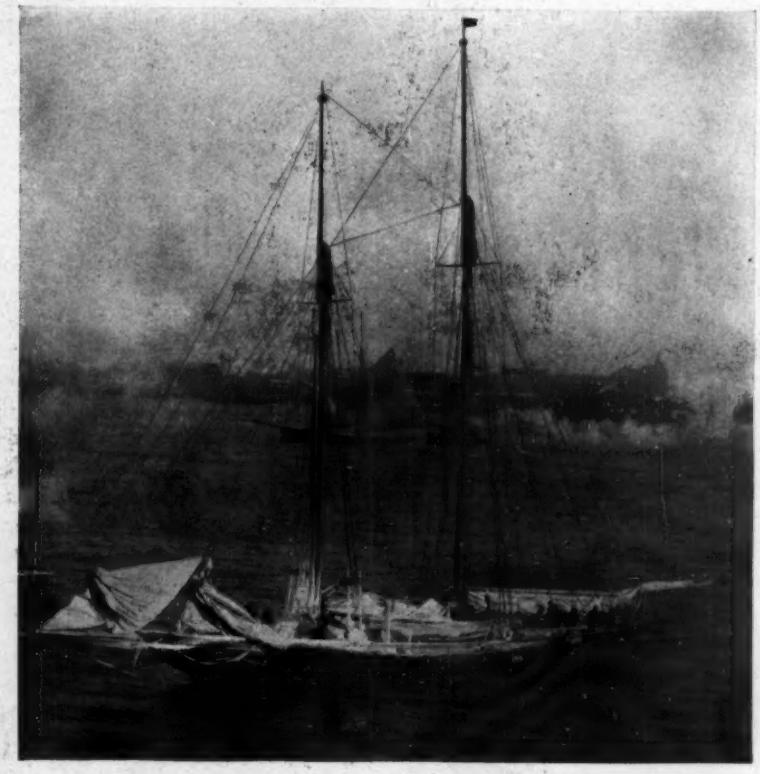
A BAPTISM of gale and ice was vouchsafed the new auxiliary schooner yacht Adventuress, now bound from Boston, by way of the Straits of Magellan, to the Pacific, where her owner, John Borden, of Chicago, will gratify his hobby of hunting whales on a long cruise in Arctic waters next summer, the yacht being under command of Captain Charles Sparks, of Provincetown, Mass., an experienced whaleman, who has spent a great deal of his life within the circle.

The Adventuress was designed by B. B. Crowninshield for her owner, especially for this work, and the contract for building her was awarded to Rice Bros., of East Boothbay, Me., the firm that has built many fine vessels of Crowninshield design. The yacht was turned out in fast time because Mr. Borden was eager to make a start. She was launched early in January during very cold weather, and considerable difficulty was experienced in putting on the finishing touches. Captain and crew were engaged weeks before, and the stepping of masts and the rigging was done in temperature quite like that to be expected in the frozen North.

The dimensions of the Adventuress are as follows: Length over all, 102 feet; waterline, 73 feet; beam, 21 feet; draft, 11 feet—quite a sizable vessel. Her outside ballast weighs 18 tons, and the inside ballast, of boiler punchings and cement, weighs 12 tons. The model is essentially that of a yacht, notwithstanding popular fancy that she would resemble a commercial vessel. Few more graceful vessels have been built, and, with her fine lines, which bespeak speed, the construction throughout is substantial and honest, so as to endure the hard work that confronts her.

The trial run of Adventuress was a memorable occasion for those who participated. From the builders' yard the craft came to Boston in a northwest gale that kicked up a rough sea. Temperatures were so low that everybody suffered severely from exposure. Ice formed everywhere that spray touched. Decks were six inches deep in crystal; shrouds grew to the size of a man's leg, and canvas set like plates of iron. The quartermaster froze his nose, and Capt. Sparks had his chin and cheeks touched by Jack Frost. Like a fragment from some berg was the vessel when she drove into Boston harbor, having completed the run at a speed exceeding 12 statute miles an hour, in spurts.

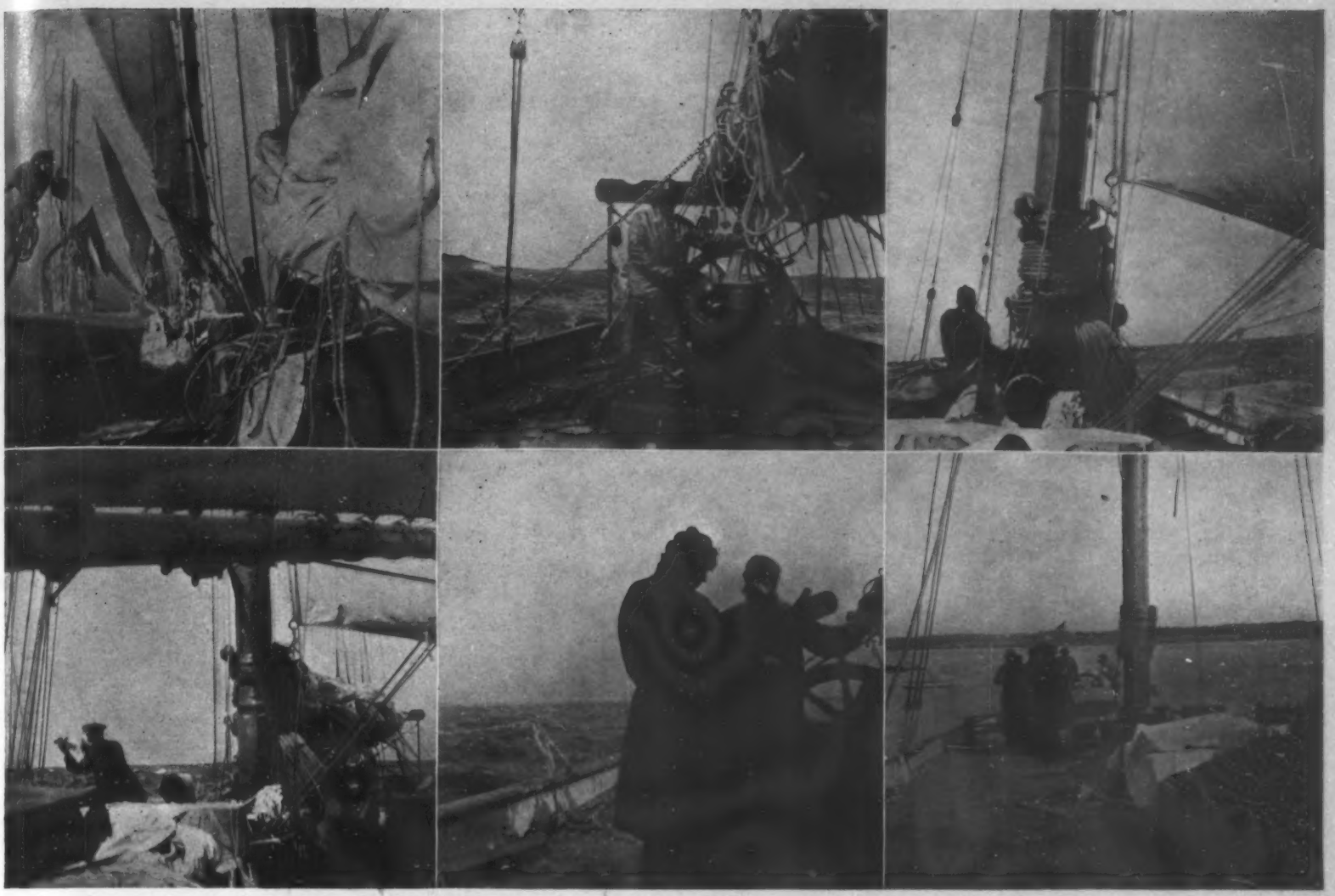
It was Mr. Borden's intention to anchor off the Boston Yacht Club, in upper Boston harbor. This was, however, impossible, because the anchors and cables were fettered to the deck by ice and could not be released. So the yacht's motor, a 4-cycle, 3-cylinder machine of 80 horsepower, built by the Standard Gas Engine Company, of San Francisco, was employed to dock the craft at Long Wharf. Sails were so completely iced that they could not be furled, and portions of the deck were filled with ice almost level with the rails. A tug was hired to thaw the schooner out and threw hot water and steam aboard nearly all day before the Adventuress had recovered semblance of her true shape.



ADVENTURESS WAS BADLY ICED UP WHEN SHE REACHED BOSTON

Most of the equipment was ready when the vessel arrived, and her supply of provisions was complete. The Adventuress was stocked for the passage to Seattle, and these supplies were, of themselves, a cargo. Boats were filled with beef, and "harness casks" occupied space that might have been used to greater advantage. Considerable time was required to stow the stuff, and, with everything in place, the yacht floated fully a foot below her designed waterline.

The small boat equipment



THE RUN TO BERMUDA WAS A STRENUOUS ONE, MUCH OF IT BEING MADE UNDER STORM TRYSAIL

was particularly complete and included a whaleboat of the type employed extensively in the Arctic. This particular boat is 28 feet long and was built at New Bedford, Mass. She is of splendid construction and finish, and is fitted with the gear required in capturing the sperm and bowhead, Mr. Borden's quest. Another boat is a 21-foot Atlantic Gurnet dory, built at Amesbury, Mass., and equipped with a 5 horsepower, 2-cylinder motor. This dory is exceptionally well built, having oak bottom and guards and partial deck. For general utility, a trawling dory, four planks to a side, was carried. This last-named boat is light in weight, and may be tossed overside with very little ceremony should occasion demand. Mr. Borden specified that these small boats, as well as the vessel, should be as strong and reliable as money could buy.

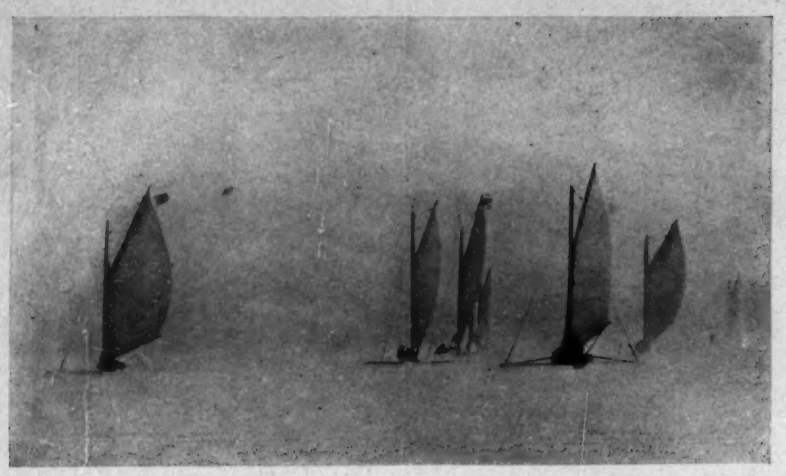
After remaining in Boston a few days the Adventuress sailed for Bermuda, Mr. Crowninshield being Mr. Borden's guest. Curiosity was expressed whether the yacht would carry her topmasts aloft, as the spars looked a trifle long for winter work. But those topmasts remained on end, while the frequenters of the waterfront shook heads and claimed the weight would do the vessel no good in a rough chance. The sails, however, came in for a lot of complimentary notice as admirably adapted to their purpose. The suit was made by Wilson & Silsby, the material being medium instead of hard duck. This selection gives canvas that may be reefed and handled without so much difficulty in cold weather. Everything is strongly roped.

In addition to the four lowers is a square sail, cut up-and-down, and very heavily roped, with a light bonnet. A raffee was provided to set over the square sail, and, of course, there were the usual assortment of storm sails stout enough to stand in almost any kind of a breeze short of a double-breasted hurricane. For supporting the main boom an English boom crotch was used, there being two sets of crotch tackles. No ordinary sea can roll the yacht so violently as to start that boom adrift. During the run from East Boothbay the main boom had been sprung, and this spar was replaced while in Boston. Designer Crowninshield, who had been aboard on the run, was a very busy individual between arrival and sailing dates. There was the eternal "last thing" to be procured before the yacht was declared ready for departure.

At noon, February 13, the Adventuress backed out of Long Wharf with a merry northwester piping. Mr. Borden had expected several guests, but they did not put in an appearance, excepting Mr. Crowninshield—and Crowninshield loves nothing better than a good sail, be it winter or summer. At 4 P. M. the yacht was abreast of Boston Light and the serious part of her career lay ahead. The compass adjuster was dismissed here, and the yacht started across the bay with maintopsail set—just to see how the spars would stand under excessive strain. The water was white with foam and the air sparkled with particles of frost. It was overcoat weather indeed for a yacht like the Adventuress to be driven so hard. Capt. F. D. West, the then sailing master, kept the little vessel to her work, and at 7 P. M. Highland Light, on Cape Cod, was abeam. That night the yacht made fast time, though the going was decidedly uncomfortable and ice was making on topsides and deck, with spray congealing over the lower third of the canvas.

Before dawn the northwester petered out, and, in its place, came a light easterly and southerly breeze that headed the schooner. The motor was started and kept going at intervals all day. The log shows that the craft made only about 100 miles for the 24 hours. But the weather was becoming more comfortable, with the Gulf Stream radiating warmth. Ice disappeared through the magic of the great river of the ocean, and, almost before the after guard knew it, a balmy atmosphere prevailed and beckoned them on. Only a few hours from cold-shrinking Boston buckets of water were drawn from the sea and the owner and designer were enjoying great sport in dashing brine over each

(Continued on page 306.)



START OF SEVEN CLASS A BOATS IN A STRONG WIND AND SNOW AT MENOMINEE. IN THE FLEET ARE SQUARE PEOPLE, PRINCESS II, SIRIUS, AND OTHERS

STORM KING, A CLASS A BOAT OF OSHKOSH, WIS., WHICH RACED AT THE NORTHWESTERN REGATTA AT GREEN BAY

The Winter of 1913 with the Ice Boat Men

A Rather Unsatisfactory Year, Due to Lack of Ice. The Principal Racing in the West and Northwest

Photographs and data collected by Dr. William M. Stanbrough

THE winter of 1912 and 1913 was a most unsatisfactory one for ice boating, as far as the sport itself was concerned, owing to the extreme fickleness of the weather and the fact that the frost king did not put in an appearance until very late, at a time when the sun was so high as to preclude any extended period of boating. At many of the numerous centers where organized ice boating flourishes there was practically no boating at all, while in others the skippers got so tired of waiting for ice that when cold weather did come they were in no mood to make the best of it. In spite of this fact, some important events were run off late in the season, the most interesting of which was, probably, on account of its bringing together boats from different sections, the regatta of the Northwestern Ice Yachting Association, held this year at Menominee, Mich. In addition to these, a number of new types of boats were tried out which hold promise of interesting racing in the future and give the boys something to think about.

In the principal ice boat centers the Hudson River did not see a single day of ice boating, and not a club, from Fishkill to Poughkeepsie, had a boat on the ice. This was a great source of disappointment, in that a number of fast boats were gathered there whose owners had looked forward to some keen racing. On the Shrewsbury there was a little racing late in the season, but not under ideal conditions; while the principal racing of the West was on Green Bay, at Gull Lake, where some fairly interesting series were sailed, and on Delevan Lake. A great deal of the interest in the season was centered around the performances of some new boats, a number of which were built from plans of the new types recently brought out by Dr. Stanbrough, of the Orange Lake Ice Yacht Club. Several of these boats were successful throughout the season, winning some important events.

THE SQUARE PEOPLE, WINNER OF THE NORTHWESTERN YACHTING ASSOCIATION REGATTA AT MENOMINEE. A "HEAVY WEATHER" MODEL

Probably the most successful meet of the year was that of the Northwestern Ice Yachting Association, held at Menominee, January 31, February 1 and 2. This brought together a number of fast boats, among them being the Princess II, owned by Emil Fauerbach, of Madison; Sirius, owned by Edward Nowack, of Menominee; Storm King and Mercury, of Oshkosh; the Square People, owned by Clarence E. Peterson, of Menominee, in the A class; and in the B class the Cold Wave and Red Bird, of Oshkosh; Yellow Kid, of Madison, and others. The Square People won the regatta in the A class, winning the first and third races; while the Princess II, of Madison, won the second race, beating Square People in a very strong breeze by only 20 seconds. In the Class B races the Red Bird, of Oshkosh, was first; Cold Wave, second, and Yellow Kid, third.

Square People is from designs by Dr. Wm. Stanbrough, and is built on his "heavy weather" model. Her performance this year has been very consistent, and she has beaten the well-known Sirius, of the older type, a number of times. It is stated, on good authority, that the Square People, and, possibly, some other Menominee boats, are going to Gull Lake or Madison next season to sail a match with the famous flyer Wolverine, owned by D. C. Olin, of Kalamazoo. The Square People carries 590 feet of sail, while the Wolverine at present has 836 square feet in her sail area.

The following officers of the Northwestern Ice Yachting Association were elected for next year:

Francis R. Wall, president; Clarence E. Peterson, vice-president, both of Menominee; Charles B. Bray, secretary and treasurer. James Jones is official

OFF TO A GOOD START AT ORANGE LAKE

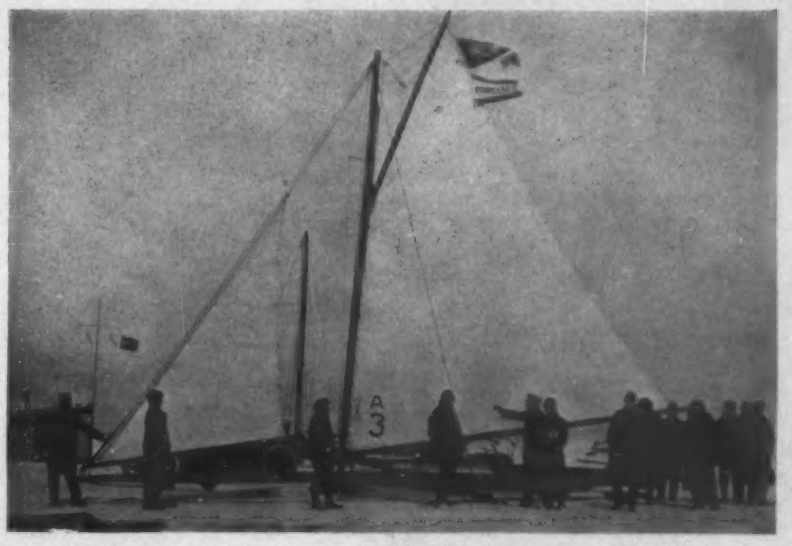
A FINE BUNCH OF CLASS B BOATS AT THE MEET OF THE N. W. I. Y. A.

sail measurer, and the racing committee is composed of Ralph Wells, J. F. Peterson, Emil Fauerbach and W. Hollister.

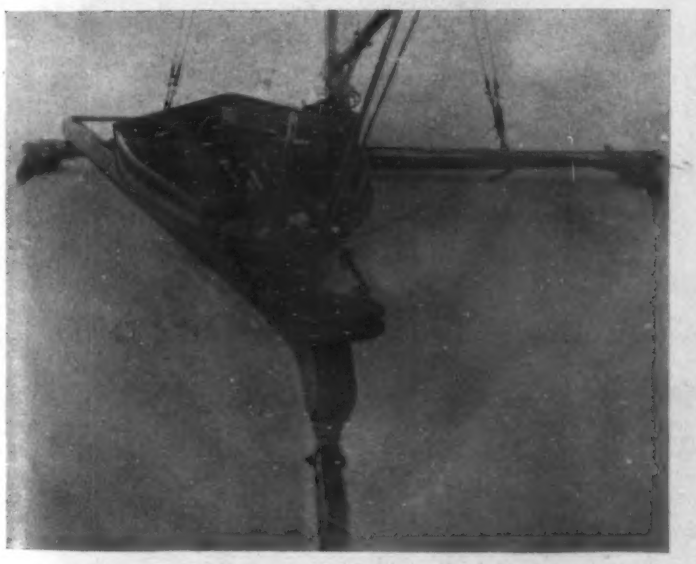
On Delevan Lake there was some good boating about the middle of February, mostly between local boats. Flying Dutchman, Sis Hopkins and Scarlet Tanager each won a race for the Stevens Cup. The latter boat is a light, "heavy weather" model with 244 feet of sail.

Down on Gull Lake the interest centered around the series of races for the Hearst Cup. This trophy was competed for on February 20, 21 and 22, and brought together a number of fast boats. The trophy was finally captured by the North Wind II, owned by Charles Norton, of Toledo, Ohio, with the Hilo, of Kalamazoo, second, and Princess II, of Madison, Wis., third.

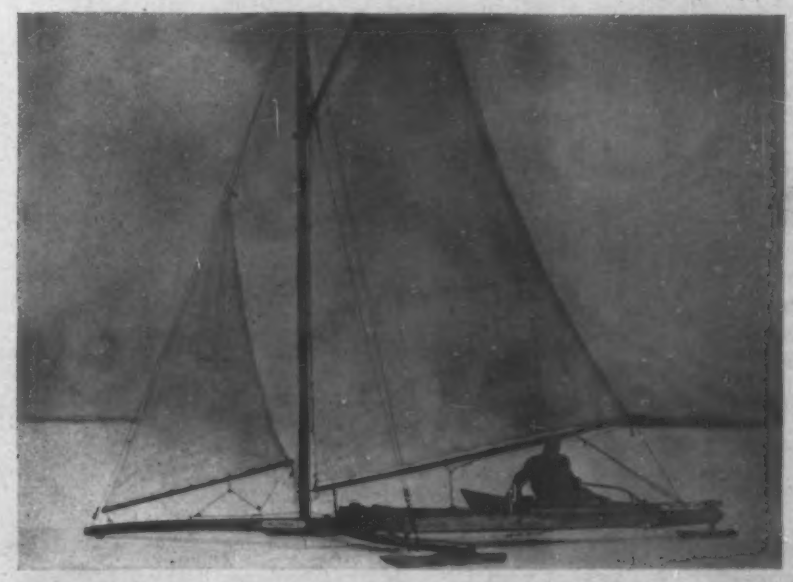
Up on Orange Lake the ice did not form until February, and there was no racing of any kind, although the latter part of the season was interesting by reason of some new types of boats designed by Dr. Wm. M. Stanbrough, of Newburgh, being tried out. One of these boats was a little 200-square-foot model designed to be non-capsizable. Instead of one runner acting as a rudder in the stern, three runners are carried at this point on a transverse piece across the after end of the backbone. When the boat is sailing upright only the center runner touches the ice. When, however, the boat raises her windward runner, the leeward one of the three rudders touches the ice and carries the weight of the boat, throwing the line of support further to leeward, where it gives added stability. In this little model, which carried 200 square feet of sail, the runner plank was only 7 feet long, while the distance from runner plank to rudder post was only 10 feet 6 inches—a very small framework to carry about 200 square feet of canvas. The only time she capsized was when one of the crew riding on the windward runner got chucked into the belly of the sail. Dr. Stanbrough says of this type: "I don't think a boat can be built after this model that will beat the old type when conditions are just suited for the latter. Ideal conditions and a well-designed boat, such as Commodore Higginson's Gale, would probably beat her going to windward; but ideal conditions come so seldom that life is too short to wait for them. Therefore, this attempt to utilize conditions which are average. The Crab is a different way to construct a framework, the object of which is to better carry a sail to drive it, utilizing to the best advantage the weight of the joy rider, or riders, as the case may be. There being but *one best way*, it would seem rather difficult to strike it the first



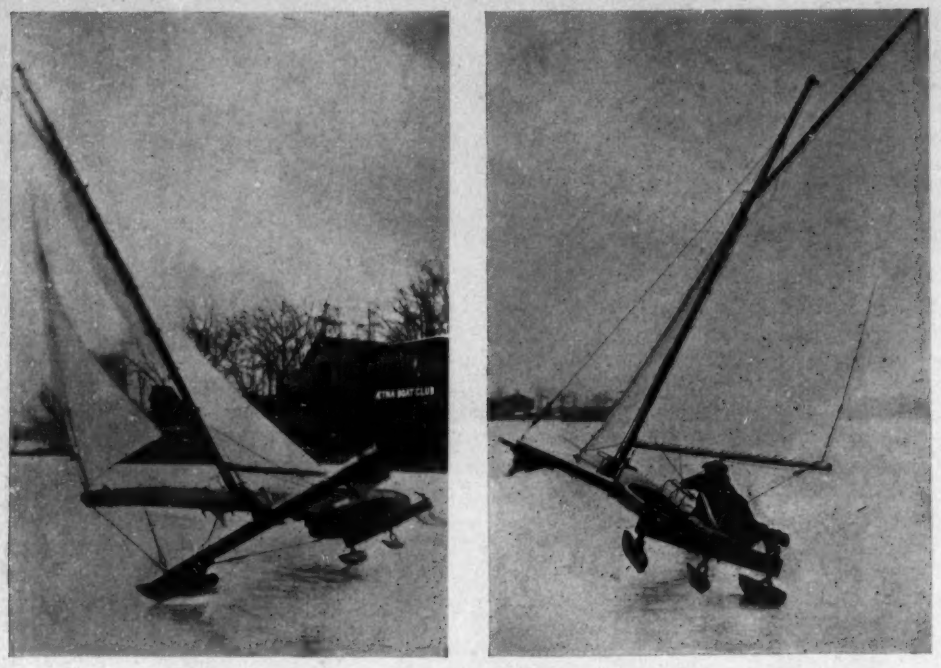
PRINCESS II, THE MADISON FLYER, SAILED BY EMIL FAUERBACH



DETAIL OF MOVABLE COCKPIT OF COLUMBIA II, OWNED BY H. E. MORTON, OF SYRACUSE. A STANBROUGH MODEL WHICH SHIFTS THE WEIGHT OF THE CREW TO WINDWARD



ANOTHER VIEW OF THE SAME BOAT, THE COCKPIT BEING CARRIED ON A MOVABLE BACKBONE CONTROLLED BY THE HELMSMAN, SOMETHING OF AN INNOVATION IN ICE BOATS



THE CRAB, AN EXPERIMENTAL, NON-CAPSIZABLE BOAT, TRIED OUT AT ORANGE LAKE. THE OUTSIDE RUDDERS GIVE A MORE EFFICIENT LINE OF SUPPORT WHEN THE BOAT IS HEELED

time; so when another winter comes on someone may arrive nearer the desired end. In the meantime, the boys have enjoyed watching the antics of The Crab."

Another new type of boat is one being sailed by H. E. Morton at Syracuse, with a movable cockpit so that the center of gravity may be thrown to windward, adding to the stability of the boat without increasing her weight or the weight of her crew. This boat was described in YACHTING a year ago, and photographs of Columbia II, a boat built on this model, with which Mr. Morton has been very successful at Syracuse, are here shown.

One of the sad occurrences of the year was an accident at Erie, Pa., in which two prominent Lake Erie ice yachtsmen were killed while boating in the harbor. The two unfortunate men were George R. Oberholzer and G. Meehan. These men, with George Final, were trying the new boat Rapid on her maiden trip, and in a blinding snowstorm ran into a crib at a high rate of speed.

A movement has been instigated for the formation during the coming summer of an association composed of the Ice Yacht Clubs in the States of Michigan and Wisconsin that will be strong enough to popularize the sport and put it on a healthy competitive basis. The proposition was broached by Commodore Wall, of the Northwestern Association, and a meeting of ice boat men will be called the coming summer. All the prominent clubs of Michigan and Wisconsin will be asked to send representatives. It would be a good thing if such an organization could be put through, and besides the clubs at Madison and on Green Bay would take in those at Oshkosh, Fond du Lac and Oconomowoc, Wis., and Kalamazoo and Detroit, Mich. The organization of the association will be followed by the perfection of plans for an annual regatta to be held under the auspices of the various clubs.

Down on the Shrewsbury the season was confined to about three days of racing. The principal events on these days were the race on February 17 for the Challenge Pennant of the two rivers. This race was won by Ingenue, owned by John Gibbins, of the South Shrewsbury Ice Yacht Club, with X. L. N. C. second. This race was the deciding one for the series between the South Shrewsbury and the Red Bank Clubs, each club having won a leg on the Challenge Pennant, and Ingenue's victory brought it finally to the South Shrewsbury organization.

On February 18 and 19 there was a race for the Championship Pennant between Imp and Tyro, of Red Bank, and Ingenue and X. L. N. C., of the South Shrewsbury Ice Y. C. Three races were sailed, Imp winning two and Ingenue one. Ingenue had hard luck in one of the races she lost by parting her mainmast near the end of the race when in a good position. Some new boats are already being talked of on the River for next year.

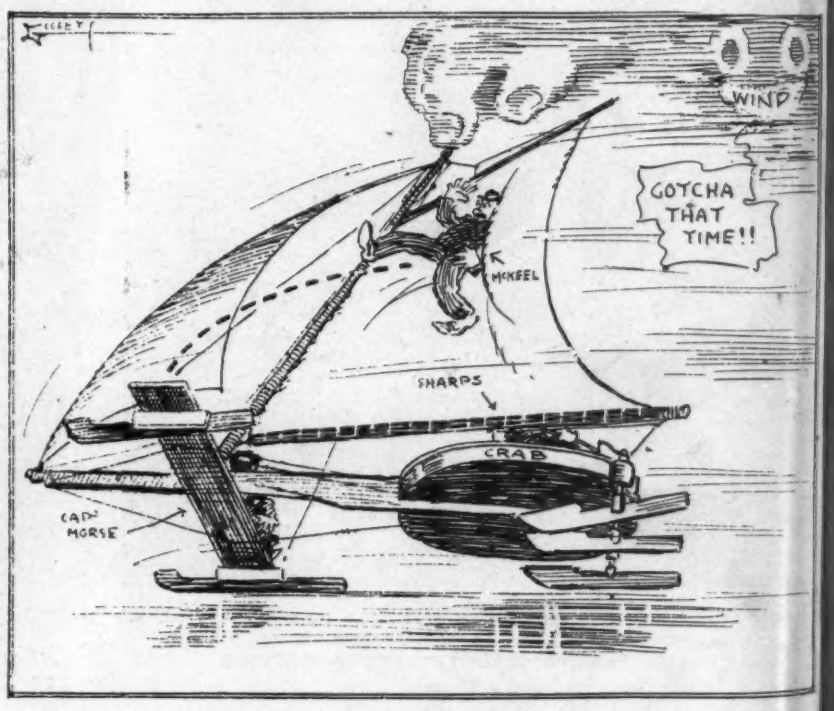
The history of ice boating is very interesting to lovers of winter sports who indulge in it. It is only in the last generation that it has been worked up from the box with a pair of skates under it and a small sail to the expensive affairs like the Jack Frost, which now holds the Championship Pennant of America and that cost several thousand dollars to build.

Between them were many styles of ice craft—the side-rail boat of 1870, then the "Wire" boat, with wire guys, invented by Captain "Hipe" Ralyea, of the upper Hudson, which was adopted at once, as it proved to be very much faster than its predecessors.

The Championship Pennant, spoken of above, is held by Jack Frost, owned by Mr. Archie Rogers, of Hyde Park, and is the one that all ice yachtsmen would like to win.

This has not been raced for now for over ten years, the last race being between the Hudson River and the North Shrewsbury boats. It seems that this pennant, which has the tradition of over thirty years of racing behind it, should induce more men to challenge for it than has been the case in the past few years. Even admitting that the conditions of ice yachting are so uncertain on the Hudson River as to deter anyone going to the expense of coming from a long distance to sail there, this hardly seems an excuse for the lack of interest shown in the last few years. Especially would it be a good thing to get some of the Eastern and Western boats together, and it seems as if this Pennant ought to be a sufficient inducement to bring about such a race. The West would, of course, be at something of a disadvantage at first in racing on a strange course where conditions are new to them; but even so, the Gull Lake flyer Wolverine should give the present holder the race of her life; and there are other large boats that have been built within the past few years whose owners should be willing to challenge for the Pennant.

The late Commodore Higginson's Aurora, built especially for this race, is for sale, and would make it interesting if raced again.



THE ONLY TIME THE CRAB CAPSIZED

Esperanza, a Moderate Sized Cruiser of Great Efficiency

A Carefully Designed Boat for Offshore and Coastwise Cruising that Can be Easily Handled and Economically Run. An Ideal Large Cruiser

By WILLIAM J. STARR, Designer and Owner

HERE is a boat which should be of especial interest to those who want something between Mr. Alden's fine "two-hander" and a "sailors' boarding house." She is large enough to take five or six friends and go in comfort *anywhere;* she is small enough and handy enough to be easily worked by three or four able men; and, above all, she is handsome, fast and seaworthy. And so, having built into her hull, her rig and her equipment the experience, the needs and the hopes of her designer and owner, she may rightly be called his ideal cruiser.

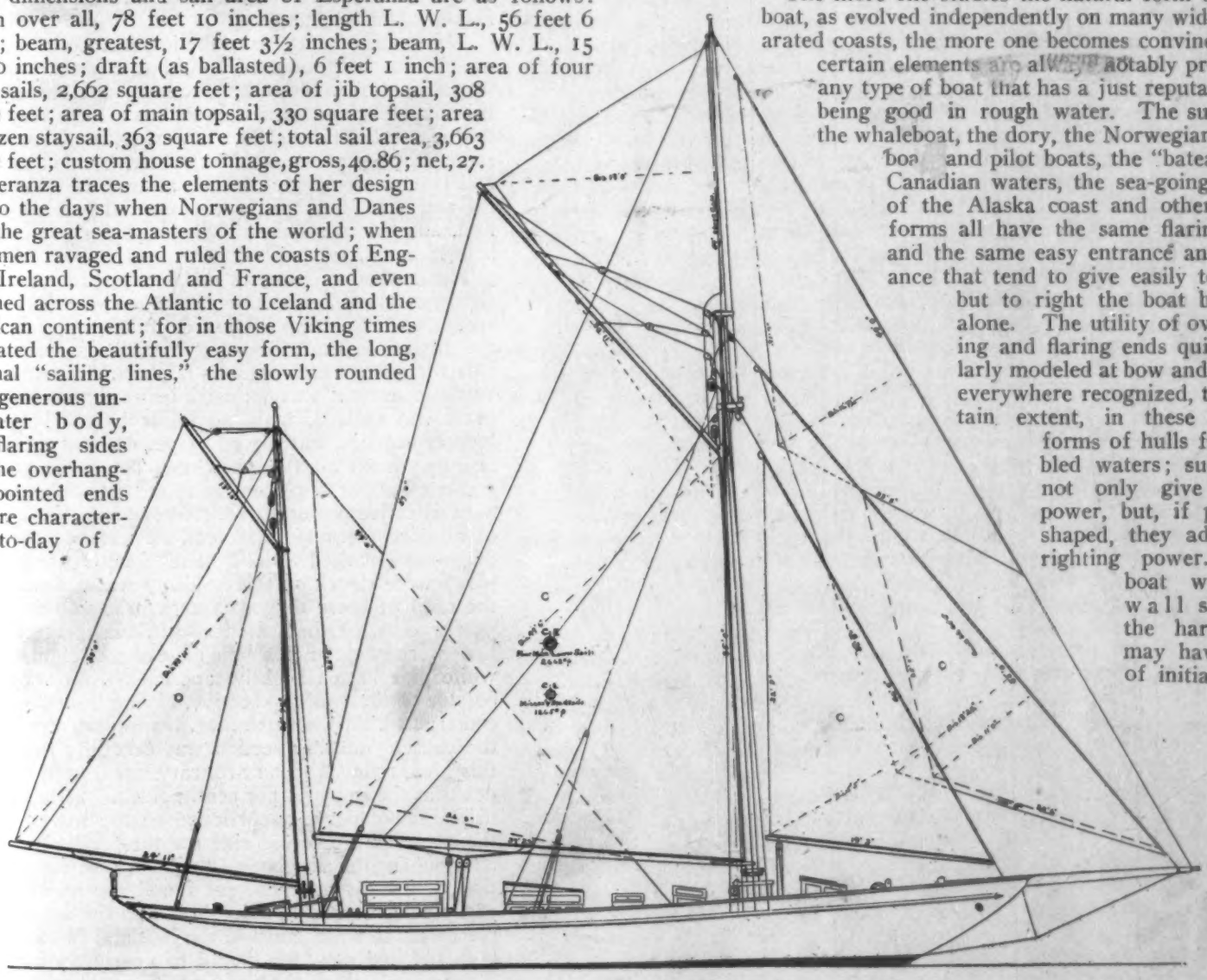
Of course, this search for the ideal is an elusive thing, for one's ideals may change and expand; furthermore, boats are intensely feminine creatures, and do not always act as they are expected to. On the whole, it is well that the last word is never reached in vessel design, else where would be the incentive for betterment in building, and where the keen zest of the sport?

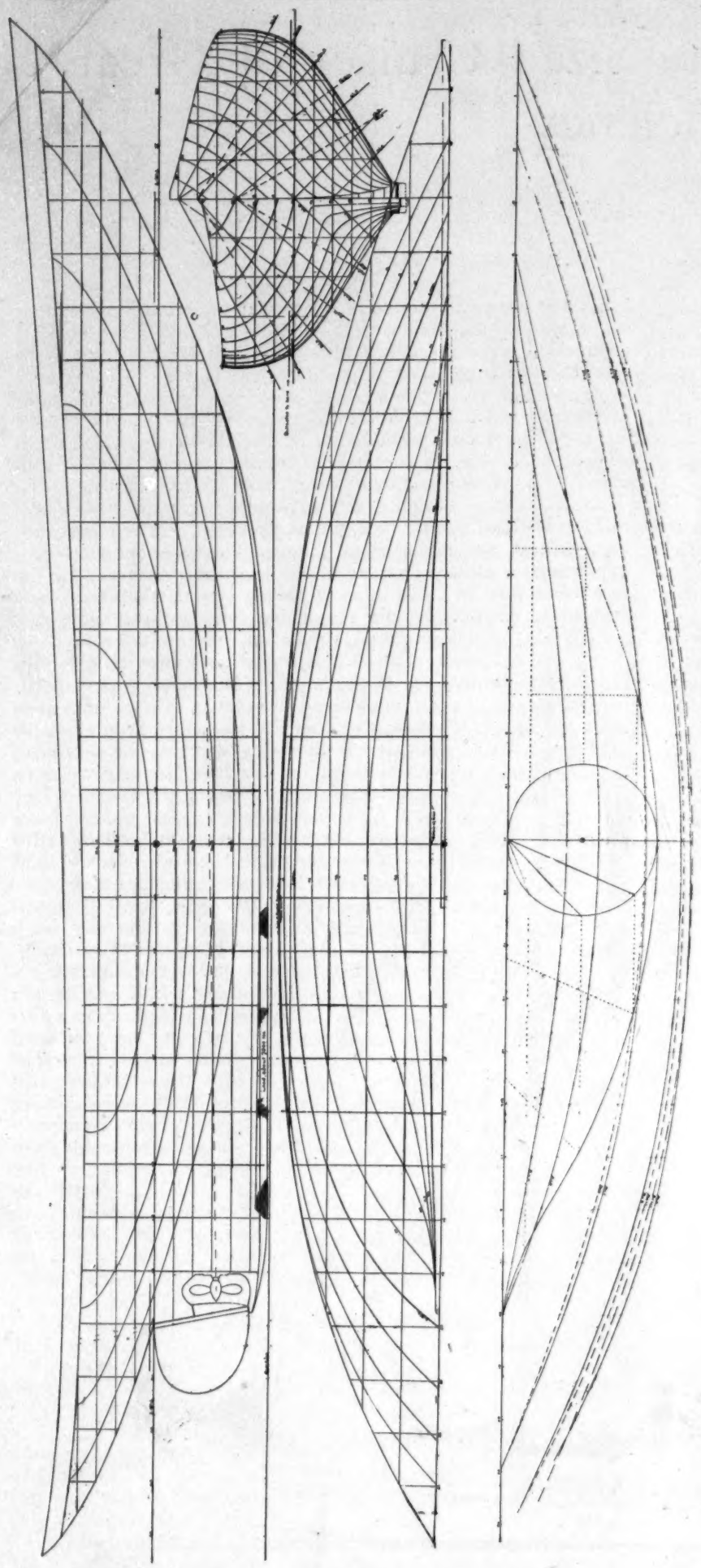
The dimensions and sail area of Esperanza are as follows: Length over all, 78 feet 10 inches; length L. W. L., 56 feet 6 inches; beam, greatest, 17 feet 3½ inches; beam, L. W. L., 15 feet 10 inches; draft (as ballasted), 6 feet 1 inch; area of four lower sails, 2,662 square feet; area of jib topsail, 308 square feet; area of main topsail, 330 square feet; area of mizzen staysail, 363 square feet; total sail area, 3,663 square feet; custom house tonnage, gross, 40.86; net, 27.

Esperanza traces the elements of her design back to the days when Norwegians and Danes were the great sea-masters of the world; when Norsemen ravaged and ruled the coasts of England, Ireland, Scotland and France, and even stretched across the Atlantic to Iceland and the American continent; for in those Viking times originated the beautifully easy form, the long, diagonal "sailing lines," the slowly rounded bilge, generous under-water body, the flaring sides and the overhanging, pointed ends that are characteristic to-day of boats that are easily driven in rough water. Whatever else that has come into the design of sailing vessels in these centuries of change and experiment has been the result either of the stern restriction of form in warships, or the exigencies of cargo carrying in trading vessels, or the man-made rules of yacht measurement, than which latter there have been no more cogent causes for the distortion of yacht hulls: witness the old "1730" English measurement rule, the absurdities of the present "Thames tonnage" formula, and our own "length and sail area" rule.

Esperanza was designed as the result of considerable experiment in hulls of similar type, without reference to any measurement rule or any racing class, though in form under water she approximates closely to some of the best hulls produced by the new rules now in force in most sailing countries—rules wisely framed to encourage more reasonable forms of sailing yachts.

The more one studies the natural form of a sea boat, as evolved independently on many widely separated coasts, the more one becomes convinced that certain elements are always notably present in any type of boat that has a just reputation for being good in rough water. The surf boat, the whaleboat, the dory, the Norwegian fishing boat and pilot boats, the "bateaux" of Canadian waters, the sea-going canoes of the Alaska coast and other native forms all have the same flaring sides and the same easy entrance and clearance that tend to give easily to a sea, but to right the boat by form alone. The utility of overhanging and flaring ends quite similarly modeled at bow and stern is everywhere recognized, to a certain extent, in these natural forms of hulls for troubled waters; such ends not only give lifting power, but, if properly shaped, they add great righting power. The boat with the wall side and the hard bilge may have a lot of initial stabil-



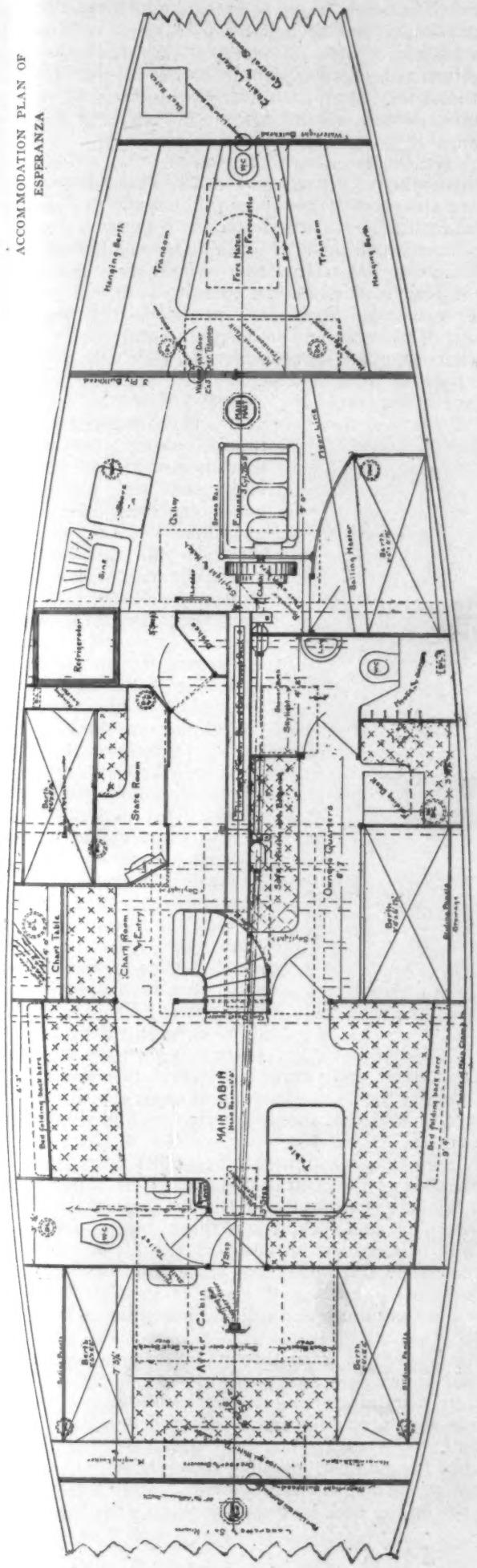


ity, but she does not take care of herself easily among waves, nor is she pleasant in larger form as a sailing craft when heavily ballasted with a deep lead keel far under water—unless, indeed, one wishes that acme of luxury: "sailing in an upright position, with wicker chairs comfortably disposed about the decks, and a full-size brass bedstead in the owner's cabin."

A sailing yacht is not intended to sail upright, and should not be so designed, nor should a power-driven yacht for sea work depend upon large initial stability produced by form alone. Not only should that part of the hull normally under water be kept with fair and easy sections and diagonal lines, but the same form should be carried into the overhangs, both forward and aft. This belief has resulted in giving this design an unusual after overhang, sufficiently long and full on the waterline to prevent squatting and bad steering in a following sea, and yet, by being drawn in aft, giving, above water, similar but flatter sections than those in the bow, thus avoiding the heavy slapping and lifting of the usual "fantail" type. This form of stern also gives a much stronger construction, as all planking comes into a rabbet on the horn timber. It is not a "canoe stern" nor a "whaleboat stern," and does not have the faults of these forms when used in a large boat; it is what Mr. Chatterton, in his "History of the Fore and Aft Rig," more correctly calls "the Norse stern." In brief, it is the natural result of the fairing out of all the fore-and-aft lines into a powerful but normal after overhang.

This at once brings us to the importance of the form of all the longitudinal lines, but especially of the diagonals. The design here submitted is based on the two main diagonals, and the result is a form very easily driven, either under sail or power, with practically the same shape presented to the water, both in entrance and run, at any angle of heel, as well as when pitching and 'scending; this is the essential feature of this hull, and the one upon which the performance of the boat is based.

The method followed in making the preliminary design was this: A tentative sheer plan was drawn, and from this a 'midship section of full body, easy bilge and high side, and of as deep draft as seemed desirable for general cruising was laid out. A "wine-glass 'midship section" was not used, because relatively light draft was desired, with the inside ballast low. The 'midship section was placed 55 per cent. of the waterline length aft of the stern, this being the point of greatest bulk of displacement found to conform to the most effective disposal of the theoretical "wave form" of displacement apportionment. Thereupon two main diagonals (marked "Dia. B" and "Dia. C" on the body plan) were struck on this 'midship section, and, using the radii of these diagonals as a base, set at a point 55 per cent. of the waterline aft, two perfectly fair lines were swept in along the edge of a straight-grained white pine batten slightly tapered aft, no body plan, outside of the 'midship section, having been previously constructed. At the same time, the underwater area of the chosen 'midship section was carefully taken, and this area, reduced to an arbitrary lineal unit, was laid down at the same 55 per cent. point as the basis for a displacement curve apportioned on the wave form of the curve of the versed sine for the forebody and the trochoid for the afterbody—the best form for distribution of the displacement yet found for an all-around easily-driven type of sailing hull, and the form of displacement to which most of the best and fastest yachts, both old and new, are found to nearly conform. In other words, the displacement curve (based on the



ACCOMMODATION PLAN OF ESPERANZA

'midship body). and the two main diagonals were made the *basis* of the design and not a mere subsequent test of *fairness,* as is the usual practice.

From these elements of the diagonals and displacement the body plan was gradually built up forward and aft, making each section to show fair with the two diagonal points on its skin surface, and also to represent the proper displacement as scaled off from the theoretical displacement curve. At the same time, it was necessary to make the sheer plan and the half breadth plan fair to these lines, so that an enormous amount of "cutting and trying" was necessary to reconcile the arbitrary displacement of each section with the fixed points of the diagonals and with a fair sweep of the sheer plan and deck lines. The form of the hull above water naturally grew out of, and necessarily conformed to, the underwater body, each end being finished into a moderate pointed overhang, whose true parabolic fore-and-aft sections faired easily into the hull under water, giving an after end with the necessary fullness and lifting power and an easy lifting bow forward. The waterlines and bow and buttock lines were run in afterward, and were found to be perfectly fair and remarkably easy.

Anyone who has followed this form of designing a hull will appreciate the difficulties of thus "working backward" from the theoretical to the concrete, and the designer of the boat does not suggest this method for general practice; but with him it was a labor of love, and no time was begrudged in adjusting areas and sections to work out this interesting problem; and through it all the displacement curve and the diagonals were kept intact.

The resulting hull has all of the important "centers" practically bunched together about the point of greatest displacement; even the center of effort works out at about the same point.

The designed draft was kept just under six feet to permit of entering many places otherwise inaccessible, but the dead-rise is as great and the displacement as much as in the usual keel yacht of this size. In practice, it was found best, on account of her high sides and considerable sail spread and the placing of a heavy engine forward, to ballast the yacht about 2½ inches lower than the designed load waterline, thus increasing the draft aft to 6 feet 1 inch; but this involved no change of form. It was found that she sailed very well with her centerboard housed; and the fact that the centerboard can be raised partially or wholly to ease the boat in a heavy sea makes this type of craft a pleasanter and possibly a safer sea boat than a deep-keel boat with a heavy ballast fin, which has to stand up and take the hammering of the waves without any chance of sagging off, little by little, to leeward when hove-to or under short sail. The deep type of centerboard yacht should need no special advocate, but in the craze for keel racing craft one finds its real abilities often ignored.

For the sail plan of this hull a modified ketch rig was chosen, with a relatively large mainsail to give good driving power to windward and a mizzen of sufficient size to balance with the head sails and to give a fair working sail, set on a stout mast stepped about 4 feet forward of rudder post. This places the mizzen mast where it has a good "bury" under deck and at a point where the rigging has sufficient spread to save it from the whipping which the mizzen of a yawl has to take when anchored in rough water. A good-sized mizzen staysail is carried, and is a very effective sail on a broad reach, or as a "lazy reef," for use with the mizzen and headsails when the mainsail is stowed.

As Esperanza is steered from deck, with no cockpit, and it was not thought desirable to have the mizzen boom hiked up high enough to clear the helmsman's head, an Edson oscillating gear was used, fitted with a head on the bronze rudder post wide enough in its offset to allow the bronze wheel shaft to pass to starboard of the mizzen mast. The wheel is located just forward of that mast and about 2½ feet aft of the after deck house, in which the steering compass is placed, covered by a half binnacle head outside and lighted from within the house. The helmsman is thus given an excellent position, especially for an auxiliary of this size, as the view from deck is much better than from a cockpit, while the man at the wheel is thoroughly protected by the house forward and the mizzen mast and gear box aft, as well as by the heavy mainsheet bitts on either hand.

The mizzen sheet block works on a short quadrantal traveler on the pointed stern piece. The main sheet is rigged in a rather novel way forward of the after deck house, with three single blocks on bridles at the boom, a double block on a long traveler on deck, and each end of the double sheet leading aft through quarter blocks on deck to bitts to port and starboard of the wheel. This gives a much better lead to the main sheet than the usual method of rigging the sheet at the after end of the boom.

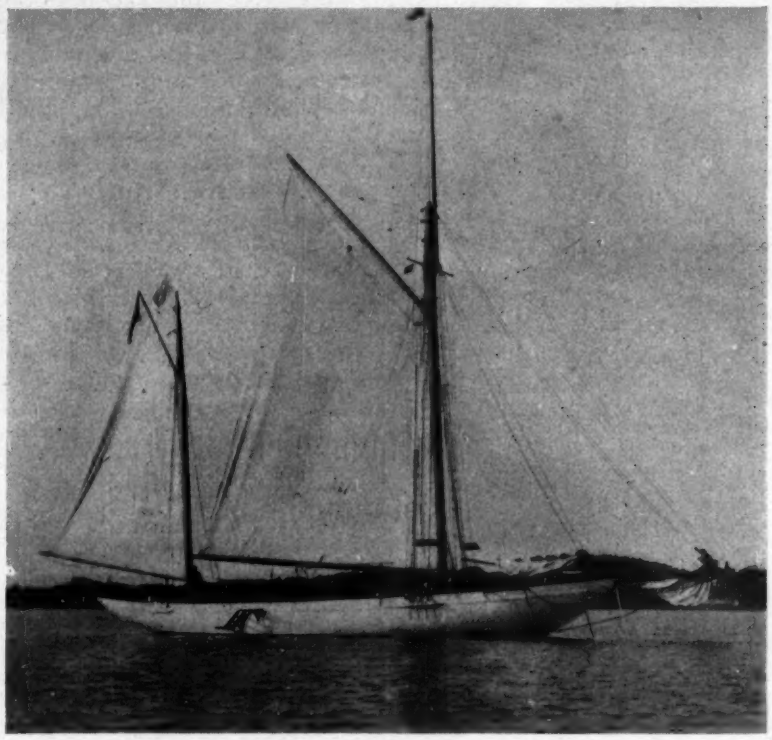
In order to give good spread to the shrouds and also because it is structurally the stronger and better practice in a cruiser of moderate beam, both

the main and mizzen rigging are fitted with old-fashioned channels over which the chain plates lead, the rigging being set up by turnbuckles shackled to these chain plates.

The mainmast has four shrouds of cast-steel rigging on either side, a double stay to the masthead as well as to the hounds, besides the regular topmast shroud, and also carries main runners and topmast preventer backstays. The mizzen has three shrouds to a side, with separate fore-and-aft backstays, rigged to shift for use in either position, mizzen masts being hard spars to hold. The masts and bowsprit are of Douglas spruce ("Oregon pine") and the other spars of Nova Scotia white spruce.

Set on the pinrail aft of the mainmast is a double Providence winch for hoisting sails. All halyards and lifts are set up with jigs, to facilitate easy handling. While this seems to complicate the rigging, it really makes the boat much easier to work with a short crew. The sails are of Lowell special duck by Wilson & Silsby. A 16-foot launch and a 15-foot rowing boat are carried on davits.

It goes without saying that the most important part of a vessel is her hull, and in Esperanza great pains were taken, not only to choose the best materials, but also to select that material best suited to each particular part.



ESPERANZA IS A REAL BOAT

Several years before this yacht was built the designer found an unusual grove of "blue oak" growing in the northern part of Wisconsin. Knowing the remarkable toughness and durability of this rare variety of white oak, and having in mind the building of such a cruiser, he personally selected a number of fine trees suitable for keel, framing and lower planking, with natural curved trees for the long ends. The keel stick used was, in the rough state, a beautiful log 55 feet long, over 30 inches in diameter, and almost without a knot.

The finished keel was sided 20 inches amidships and moulded 16 inches, on top of which was worked a solid oak bed-log for the centerboard trunk, about 17 inches siding by 11 inches deep, extending forward over the scarf of the naturally curved stem-piece. As the horn timber aft was also from one natural curve, the whole backbone is made of three pieces. This construction may seem unnecessarily heavy, but it adds greatly to the strength and life of the hull. The frame is of double-sawed 2¾-inch blue oak, the frames thus being sided 5½ inches, moulded 5 inches at heel and 3½ inches at head and spaced 33 inches apart; to the heels of these frames are worked heavy wrought-iron floors, galvanized. Between each set of sawed frames is a steam-bent frame, 3 inches square, of Northern rock elm—a wood of wonderful strength and resiliency.

The bilge stringers are double, 2½" x 5½", making each stringer 2½ inches by 11 inches. There are two sets of these on each side, through fastened. The clamp is 2½" x 10", and the shelf 3" x 7"—all of the same oak. There is also a sister-clamp, 2¾" x 5½", of Douglas spruce. The deck beams are of white oak, alternating with Douglas spruce, spaced 16½ inches centers. Forward and aft, where special strains come, there are worked several hackmatack deck beams, with longitudinal members under the deck beams to take the strain of the windlass forward and of the capstan aft. The whole frame is strengthened by some forty-five hackmatack knees and several black walnut knees, and is thoroughly tied together with four sets of diagonal steel straps ⅛" x 2½", galvanized, running continuously from the rabbet in the keel up around the frame, then over a framehead, across the deck, over another framehead and down to the rabbet at the other end of the hull.

The bulwark stanchions or top timbers are of Osage orange, as are also the bitts, pin rail, cavels and cleats. The breast-hooks fore and aft are also worked from natural knees of this remarkable wood (the *Bois D'Arc* of the Indians), a timber unexcelled for elasticity, strength, beauty of grain and weather-enduring qualities. This wood was taken from several trees cut on the owner's place in Maryland, where the boat was built. It is somewhat similar to locust, which was used in some parts of the boat, but more beautiful, stronger, and stands the weather better. For deck houses, hatches, plank-sheers and rails, teak was chosen as being the best possible wood; the plank-sheers are 2¼-inch teak. The deck is of white pine 2¼" x 2¼"

It will be noticed that an unusually strong construction was chosen for all parts of hull, and the planking—a most important part—is no exception. The garboards are each in one length of 2-inch blue oak, and the sheer strakes are of the same timber; also, the broad strake next the garboards. Above this four or five planks on each side were run of rock elm; then 2-inch long-leaf yellow pine was used, tapered to 1¾ inches at the ends; some of these planks were 77 feet long, going on without a butt. This made a hull very smooth outside and able to withstand severe shocks.

The deck house, companionway, skylights and hatches have high coamings and frames of 2¼-inch teak with paneled sides in place of the usual thin stuff used in such structures. These deck fixtures were purposely built of greater height than usual, not only to keep out water and permit comfortable ventilation in a sea, but also because the owner hates to have on a boat of good size little, low coamings that catch him right in the shins as he goes forward or aft.

The deck house aft has a substantial teak bench 23" x 6' 5", built in on each side of the central skylight. Here a number of people can sit in comfort without being in the way of the helmsman, as they often are in a cockpit; and these benches are a boon to one who likes to sleep out on deck. The bulwarks are high enough to give considerable protection, being 16 inches to the top of the rail forward, diminishing to about 11 inches aft. Brass stanchions for life lines are set on rail from the mizzen mast forward to the davits.

The centerboard well is lined throughout with heavy copper, turned over and fastened to each plank as put on; and the keel, deadwood and stern framing are all sheathed with heavy copper up to the garboards, thus protecting from worms the most vulnerable parts of the hull.

The method of hanging and handling the centerboard is a very satisfactory one. The board, when up-ended, can be hoisted right up through a slot in the deck long enough to take the board end-

wise, but not nearly so long as the whole centerboard case, which extends back under the companion stairs. This deck slot is closed by a removable teak stopper piece. At the forward end the board is hung from deck by a 1½-inch Tobin bronze rod, a hook forged on the end of which carries the pin (which is riveted through heavy bronze lugs at the lower forward corner of the board) and engages over a heavy bronze pin through the lower forward end of the well. This gives the choice, not only of inspecting the centerboard while afloat, but also of either lowering it down through the keel and bringing it up alongside, or of hoisting it right out on deck by the peak halyard purchases. The centerboard is made of 2⅞-inch willow-leafed oak—a wood particularly adapted for centerboards because of its freedom from warping and its smooth wearing qualities. It is bound with ¼-inch copper, and is hoisted and lowered by a phosphor bronze rope leading up through a heavy brass tube to a Providence centerboard winch. Near this winch an Edson diaphragm pump, with inlets to bilge and outboard, is installed on deck, both as an emergency pump and for washing down.

Good ground tackle and powerful gear for handling it are absolutely essential to the safety and comfort of a cruiser; a racer may take the chance of saving weight and expense here, but not the cruiser. How these cabin motor boats go joyfully along our coasts with little killocks about big enough for a dory and dodge the wrath of Jupiter, the disturber of barometers, is a puzzle to many a sailor. Recently an enthusiast, building a 65-foot motor cruiser, was overheard pleading with his designer to "cut out that unsightly windlass on the forward deck and put on a little brass capstan about as big as your hat!"

So Esperanza, being born of experience, carries forward a Providence double pump-brake friction windlass, with three speeds, fitted with two wildcat heads for ⅝-inch chains, and also two nigger heads for lines. This windlass weighs over 750 pounds, but it handles the chains and anchors with ease, and, best of all, it will pull the ship off if she gets aground.

Between this windlass and the hawse pipes are set regular rubber buffer chain stoppers to take the surge when at anchor. The galvanized BBB tested McKay chains carry a 250-pound anchor on starboard bow and one of 150 pounds on port bow, both of the Rex type. As "spares," there are carried aft a small kedge and a Cape Ann long-shanked anchor of 250 pounds. On the after deck, back of the steering gear, is set a Providence cavel capstan, which, though compact, is very powerful; and this has been found convenient for stern lines and for warping off. There is also, near the main sheet bitts, a bronze sheet-holder winch, with which one man can take in the heavy main sheet. Of course, all these things on deck do not look like a racer; but they add greatly to the safety and comfort of a cruiser.

The cabin plan of any yacht is essentially a matter of individual taste; that of Esperanza reflects the ideas of the designer. The companion stairs, turning over the after end of the centerboard trunk, with the well-lighted chart room at the foot; the main cabin of good size, with let-down berths behind upholstered backs of transom sofas; the light and lofty after cabin, with two fixed berths, a big sofa and roomy closets and lockers, cut off from the sail room aft by a watertight bulkhead; the comfortable quarters for the owner, with its bathroom, couch and desk; the guests' stateroom; the combined galley and engine room, ventilated and lighted by a big hatch and skylight, with a sailing master's cabin opening off; and the forecastle, with its watertight bulkheads, are "features," as the architectural writers say.

The owner's quarters are finished in teak; the two after cabins and the stateroom in white enamel and mahogany; elsewhere, in butternut and cypress. All cushions are leather-covered and filled with Java kapoc, as are all mattresses and pillows, making them available as life-preservers.

The important question of power—particularly important in an auxiliary—was given much thought. The owner has used gasolene boats for many years; has tested this handy fuel quite thoroughly for auxiliary work, and having once been on fire in an auxiliary out of sight of land, with several other narrow escapes in other boats, knows its dangers as well as its advantages. The rapidly rising price of gasolene has also to be given serious thought.

This boat having been built for long and, it is hoped, restful cruises, and to be operated at a minimum expense, it was decided to use some power other than gasolene, and a kerosene engine was finally decided upon after a thorough investigation of different heavy oil engines and producer gas outfits.

The power used is a Wolverine engine of 3 cylinders, 7½" x 9", rated at 27 horsepower, but developing considerably more when turning a 34-inch two-bladed Gordon feathering propeller of 34 inches normal pitch at 400 revolutions.

A two-bladed *feathering* screw is almost a necessity in an auxiliary if one wishes to get any results under sail, otherwise the drag of the propeller, whether left with free tail shaft or locked in place, is very considerable. With this type of feathering screw, which also reverses, no reverse clutch is needed, and the engine is fitted with a large cone "one-way clutch" built into the flywheel, the flywheel being set aft of the cylinders, both to bring engine bed lower and also to give more even torque to the shaft. The propeller was built especially heavy, with a large conical hub and the inner solid shaft of 2-inch Tobin bronze, to carry as much strain as the 2-inch steel shafting running to the engine.

As the shaft must run off-side to the starboard of the centerboard trunk, two heavy universal joints are set in the line of shafting under the floor, and behave admirably, taking up the shaft deflection of about three degrees without any apparent friction or heating. It was, of course, necessary to fit a thrust bearing aft to relieve these joints of propeller thrust, and a heavy collar bearing of the steamboat type was used, with the reversing and feathering device for the propeller immediately aft of it.

By a simple system of countershaft, reach rods and bell cranks the control of this mechanism is led to deck and is actuated by a heavy bronze lever to port of the steering wheel. It is thus possible for the helmsman to control the pitch of the wheel, to slow up, to stop, reverse, and feather the blades for sailing.

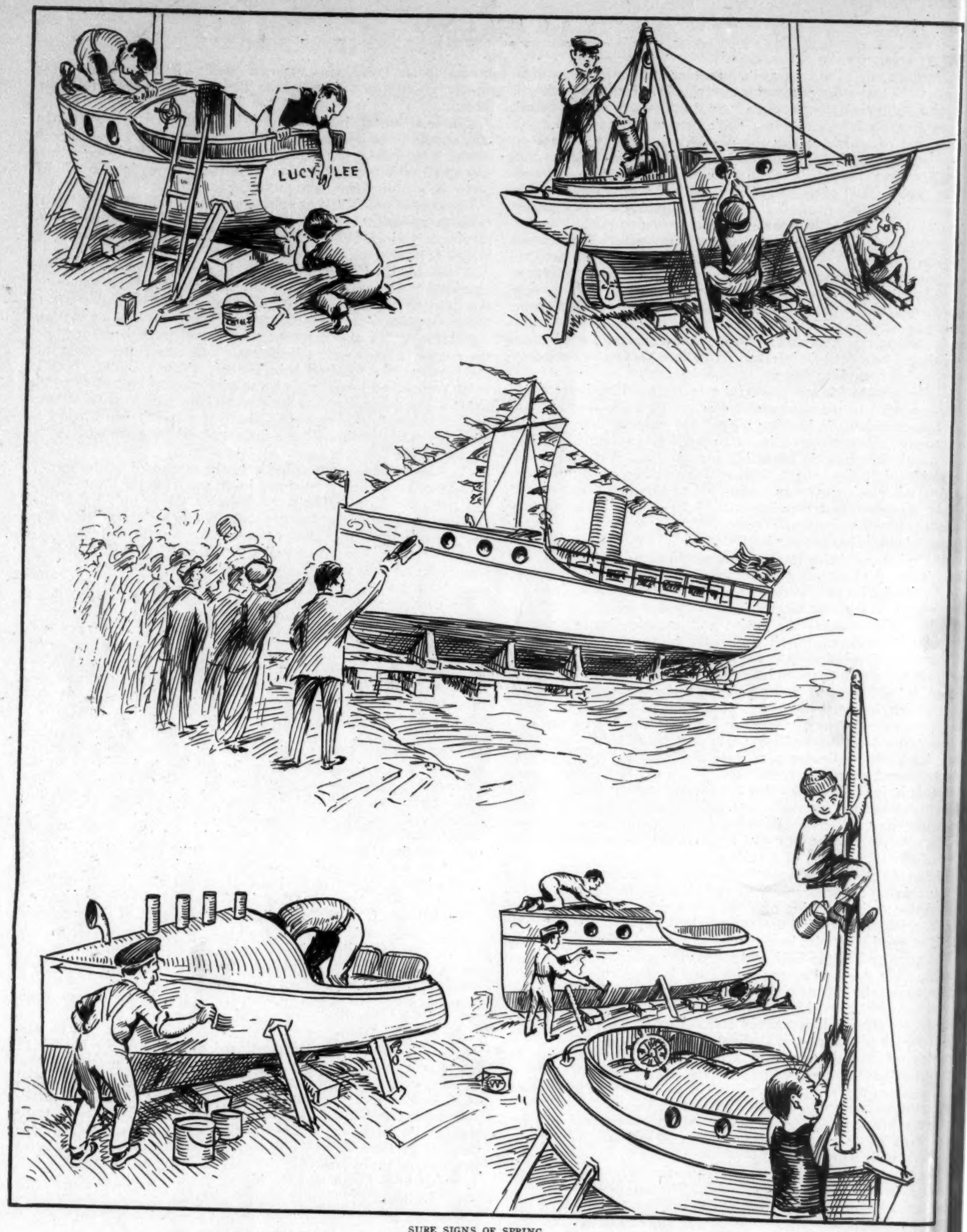
Under such relatively small power this large hull, displacing over 44 tons, shows rather remarkable results, the speed in calm water being 8½ miles. Of course, as with all auxiliaries, the spars and rigging greatly reduce the speed under power when pushing against a head wind, and to get efficient work from the propeller the pitch of the blades should then be lessened; on the other hand, when the sails can be used at all to advantage, even when almost on the wind, the speed under engine can be considerably helped by increasing the pitch of the propeller blades, the constant push of the sails taking up the slip of the greater pitch and the engine turning up at the same speed; this is one of the great advantages of a propeller whose blades can be adjusted from no pitch to the full fore-and-aft position of "feathering" for sailing; yet this important fact is often overlooked in auxiliaries.

Directly abaft of the propeller the lower part of the rudder is slightly "balanced," being built of oak, strapped and bolted with bronze to a 2⅞-inch Tobin bronze rudder post. Special care was taken with the stern framing to give the water a free passage without setting the propeller in such a big opening as to hurt the steering when under sail—another of the many compromises necessary in designing a successful auxiliary.

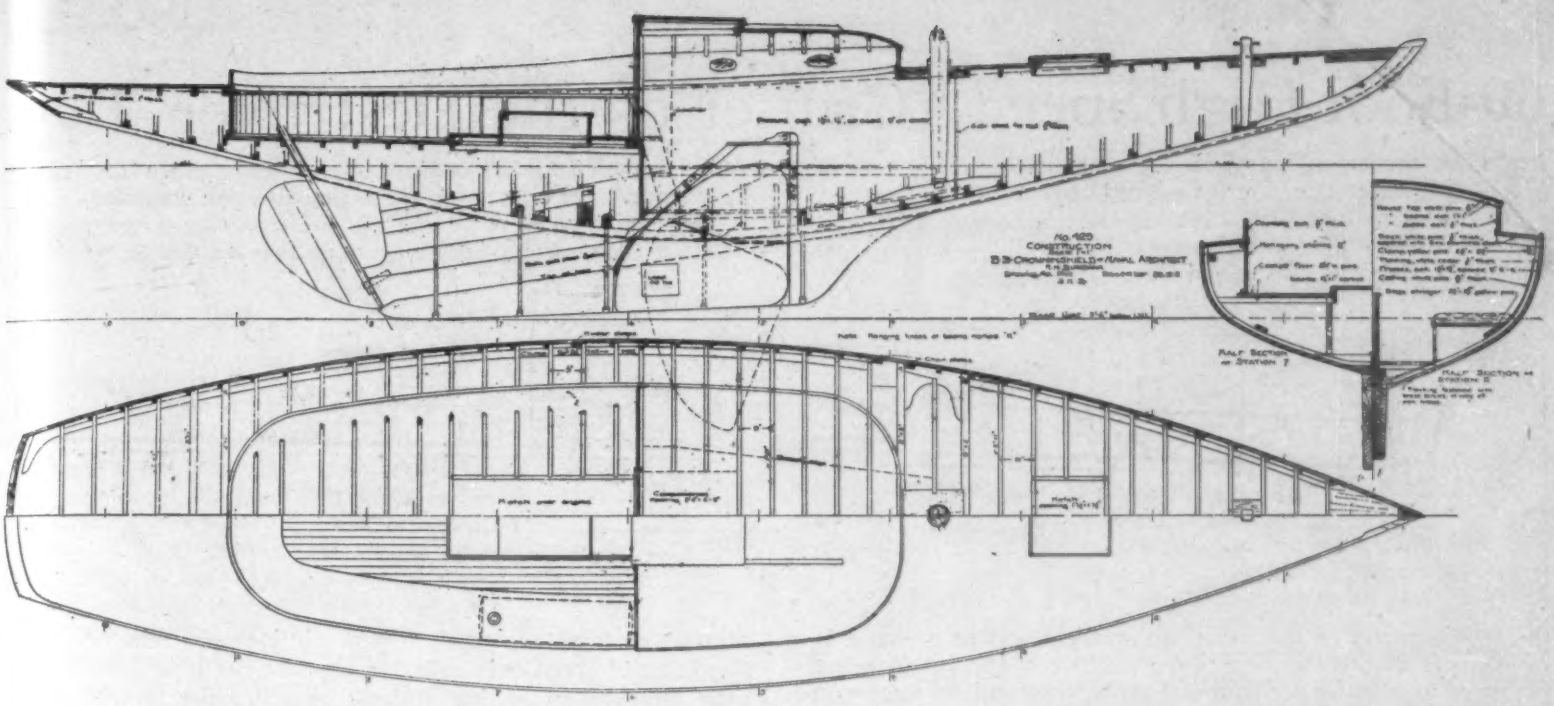
As it was planned to have no gasolene whatever aboard, the engine is fitted to start on denatured alcohol, and the change to kerosene is quickly made and without any very noticeable difference, except a slight increase in power. The alcohol is carried in a small tank on the bulkhead forward of the engine; the kerosene tanks are located, one, of 100 gallons, under the after transom in the forecastle, and two tanks, of 100 gallons and 150 gallons, under the floor of the passageway on the port side, all tanks discharging into a small gravity tank near the carburetor.

It has been found that the higher grades of kerosene, such as the "Aladdin" or "Pratt's Astral" brands of the Standard Oil Company, give better results than the low-grade kerosenes; in

(Continued on page 306.)



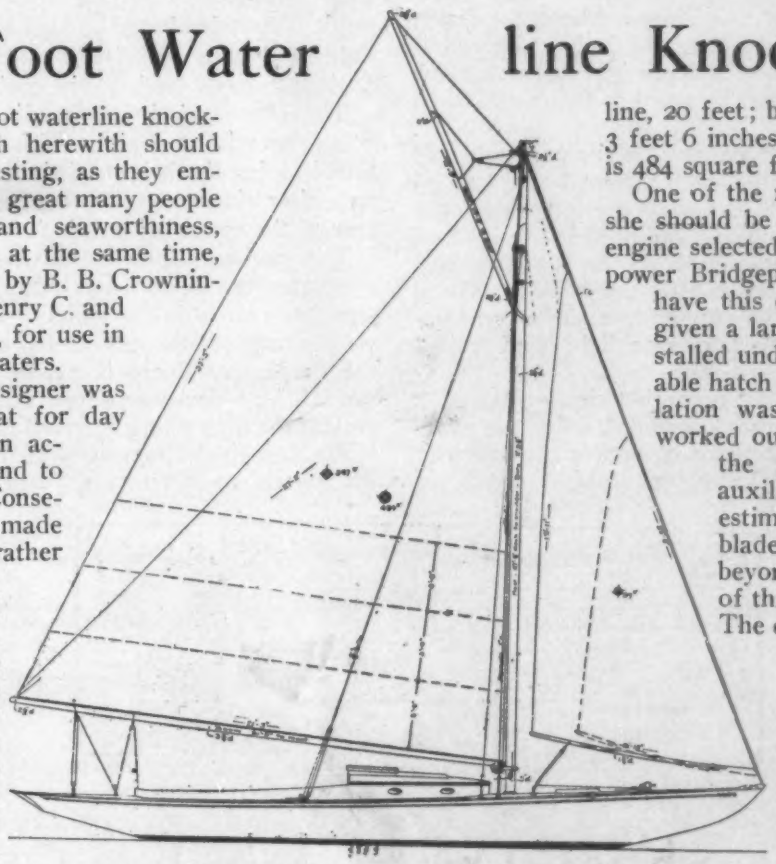
SURE SIGNS OF SPRING.



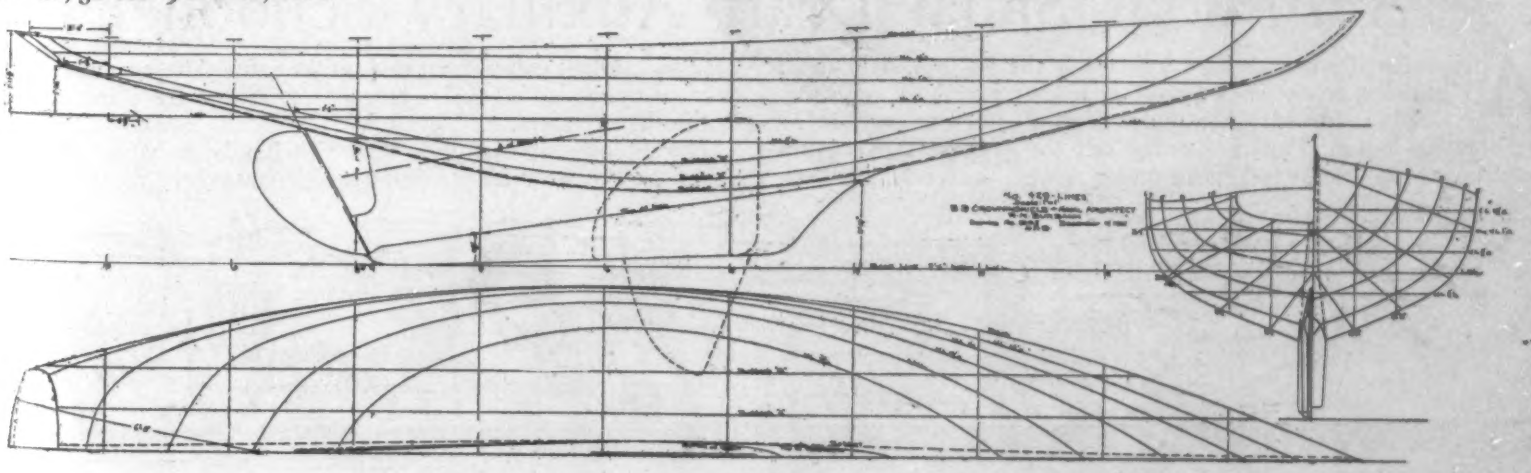
A 20-Foot Waterline Knockabout

THE plans of the little 20-foot waterline knockabout which we publish herewith should prove particularly interesting, as they embody just those qualities which a great many people want in a boat—i. e., ability and seaworthiness, roominess, moderate draft, and, at the same time, beauty. This boat was designed by B. B. Crowninshield, of Boston, for Messrs. Henry C. and Francis T. Meyer, of New York, for use in Vineyard Sound and adjacent waters.

The problem put up to the designer was for a comfortable and able boat for day work, though with enough cabin accommodation to afford shelter and to give limited cruising facilities. Consequently, the construction was made fairly heavy and the overhangs rather long drawn-out for the sake of making the rig well inboard where it could be easily handled. The ends, however, are by no means low and flat, the waterline and sections being comparatively sharp at each end. The boat is of the deep centerboard type with outside ballast. Her principal dimensions are: Length over all, 32 feet 9 inches; waterline, 20 feet; beam, 8 feet; draft with board up, 3 feet 6 inches. The total area of working sails is 484 square feet.

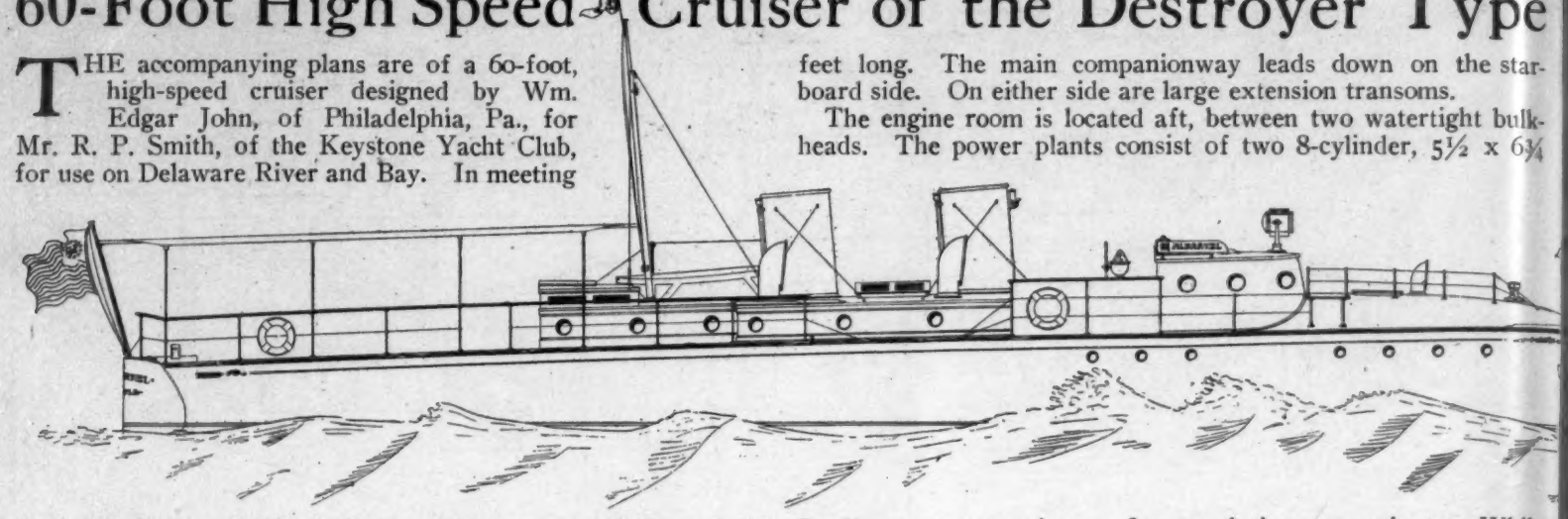


One of the requirements of the boat was that she should be easily driven under power. The engine selected is a 2-cycle, 2-cylinder, 10 horsepower Bridgeport; and as it was not desired to have this engine in the cabin, the boat was given a large cockpit, and the motor was installed under the cockpit floor with a removable hatch 8 inches high over it. The installation was very carefully and ingeniously worked out by the owner so as to eliminate the possible troubles to which many auxiliary installations are heir. It is estimated that the speed, with a two-bladed wheel, will be 8 miles an hour, beyond which it is hard to drive a boat of this size without great loss of power. The cockpit is large and roomy, and the cabin has transoms on either side, with headroom for anyone sitting on them, hanging lockers, etc. The boat should make an ideal boat for the purpose for which she is intended, having lots of room, being fast, easily handled and easily driven.



60-Foot High Speed Cruiser of the Destroyer Type

THE accompanying plans are of a 60-foot, high-speed cruiser designed by Wm. Edgar John, of Philadelphia, Pa., for Mr. R. P. Smith, of the Keystone Yacht Club, for use on Delaware River and Bay. In meeting the requirements of this craft the problem was to design a low, rakish boat of the Destroyer type which could maintain a cruising speed of 20 miles per hour and yet be substantially constructed.



The hull is rather heavily built for a high-speed boat, the frame being of oak, 1½" x 1⅞" and planking 1⅛-inch white cedar. The keel is white oak sided 6 inches. There is a heavy keelson running the entire length of the boat, fastened to floors and fitted on top of frames.

Abaft the crew's quarters is a water tank on the port side and a gasolene tank on the starboard side, with a pilot house located over these. A well is sunk below the main deck to keep the height of this house as low as possible. The pilot house is fitted with a steering wheel and binnacle, and can be used in bad weather to handle the boat from instead of the bridge. There is a transom seat on either side large enough to make a comfortable berth. A 2,000-candlepower electric searchlight is controlled from the inside of this house.

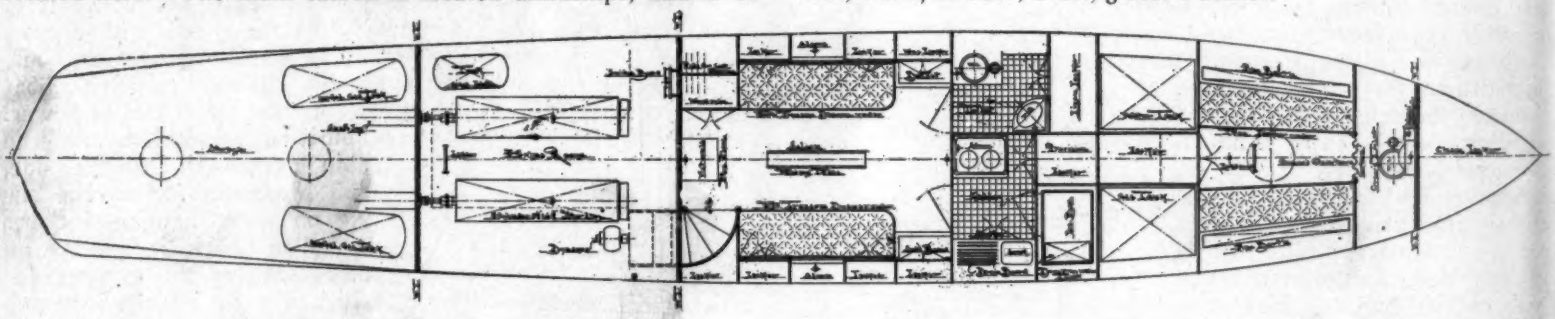
Abaft of the pilot house comes the owner's toilet, on the port side, with a large linen locker located forward. On the starboard side is the galley. A No. 2 Shipmate stove is conveniently located here. The main saloon is located amidships, and is 12 feet long. The main companionway leads down on the starboard side. On either side are large extension transoms.

The engine room is located aft, between two watertight bulkheads. The power plants consist of two 8-cylinder, 5½ x 6¾ Sterling motors turning up 800 revolutions per minute. While the designed speed only calls for 20 miles per hour, there will be little difficulty in getting at least 25 miles per hour with this outfit. A switchboard is located on the forward port side and a lighting dynamo is belted to the engine. A large companionway at the after end leads to the cockpit.

The after cockpit is exceedingly roomy, there being plenty of room for wicker chairs. This cockpit is 12 inches below sheer line, keeping the height of the awning down. Under the cockpit on either side are 100-gallon seamless steel gasolene tanks, the rest of the space being left for storage.

The outboard profile shows two stacks. The forward one ventilates the saloon and carries the whistle tank. The smoke pipe from stove in the galley is also led to this stack. The after stack ventilates the engine room and carries off the smoke from the fireplace. There is a high turtle deck forward, with two small bridge decks arranged on either side, and waist rails, that protect the man going forward to tend lines.

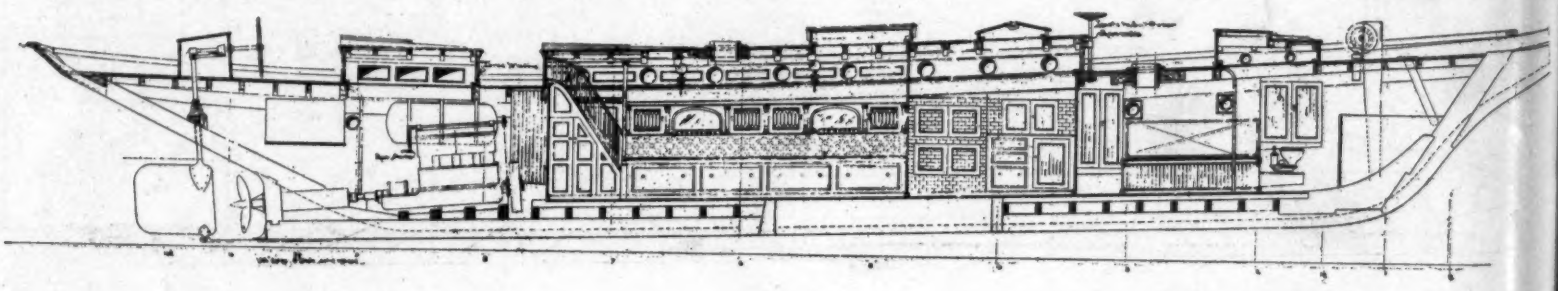
The principal dimensions of the boat are: Length over all, 60 feet; beam, 10 feet; draft, 3 feet 6 inches.

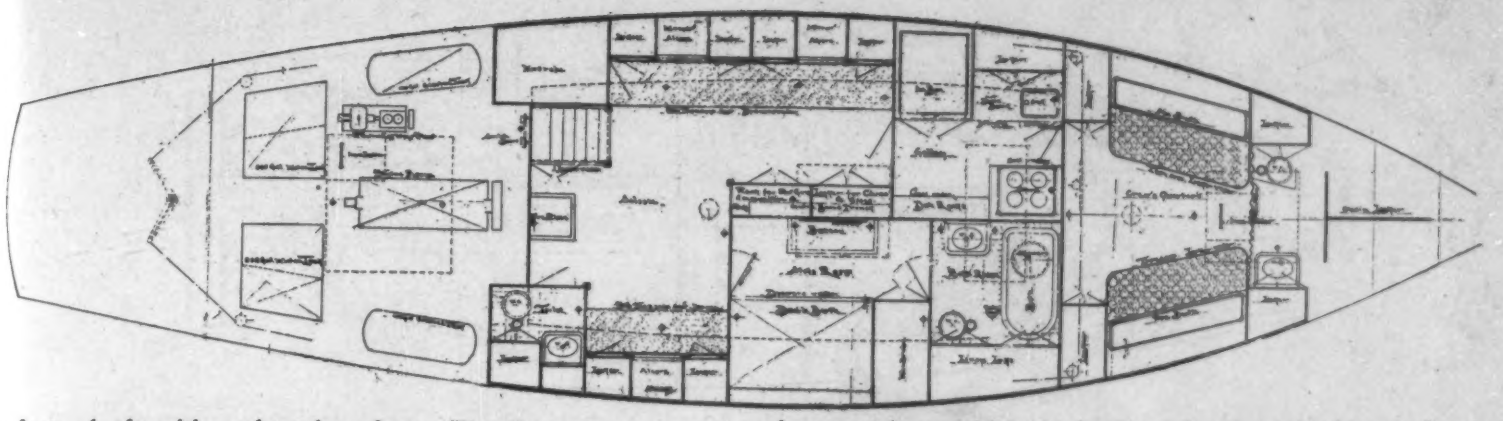


A 70-Foot Shoal Draft Auxiliary Schooner

AN unusually interesting auxiliary is the 70-foot, light-draft cruising schooner designed by J. Murray Watts, of Philadelphia, for Mr. Alexander Van Rensselaer, now being built at Essington, Pa. Following out the present tendency in auxiliaries to obtain good speed under power, the yacht has been designed to be easily driven and, at the same time, to show a good turn of speed under sail. Her draft is kept light for cruising in Southern waters.

The dimensions of this boat, which has been named Fareeda, are: Length over all, 70 feet; length waterline, 54 feet; beam,



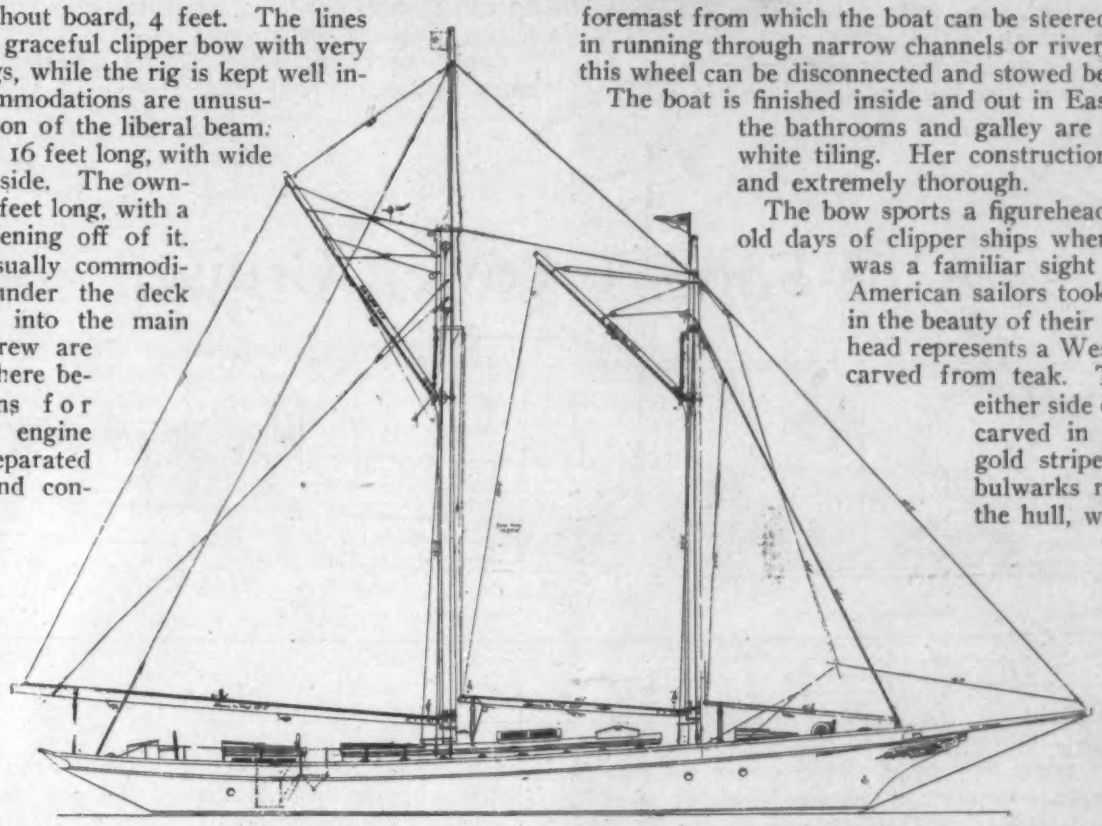


17 feet; draft without board, 4 feet. The lines of the boat show a graceful clipper bow with very moderate overhangs, while the rig is kept well inboard. The accommodations are unusually roomy by reason of the liberal beam. The main saloon is 16 feet long, with wide transoms on either side. The owner's stateroom is 9 feet long, with a large bathroom opening off of it. The galley is unusually commodious, is entirely under the deck house, and opens into the main saloon. The crew are berthed forward, there being accommodations for four men. The engine room is entirely separated from the cabin, and contains a heavy-duty, 37 horsepower, 6-inch by 8-inch motor with a separate electric lighting and pumping plant. All engine controls lead to the after wheel, there being another horizontal steering wheel near the foremast from which the boat can be steered when under power in running through narrow channels or rivers. When not in use this wheel can be disconnected and stowed below.

The boat is finished inside and out in East Indian teak, while the bathrooms and galley are finished in blue and white tiling. Her construction is very substantial and extremely thorough.

The bow sports a figurehead reminiscent of the old days of clipper ships when the American flag was a familiar sight on all seas and the American sailors took a sentimental pride in the beauty of their vessels. The figurehead represents a West Indian girl, and is carved from teak. The trail boards on either side of the figurehead are carved in gold scrolls, and a gold stripe running below the bulwarks relieves the sides of the hull, which will be painted black. The boot-top will be formed by copper sheathing running several inches above the waterline and separated from the black hull by a 2-inch white strip.

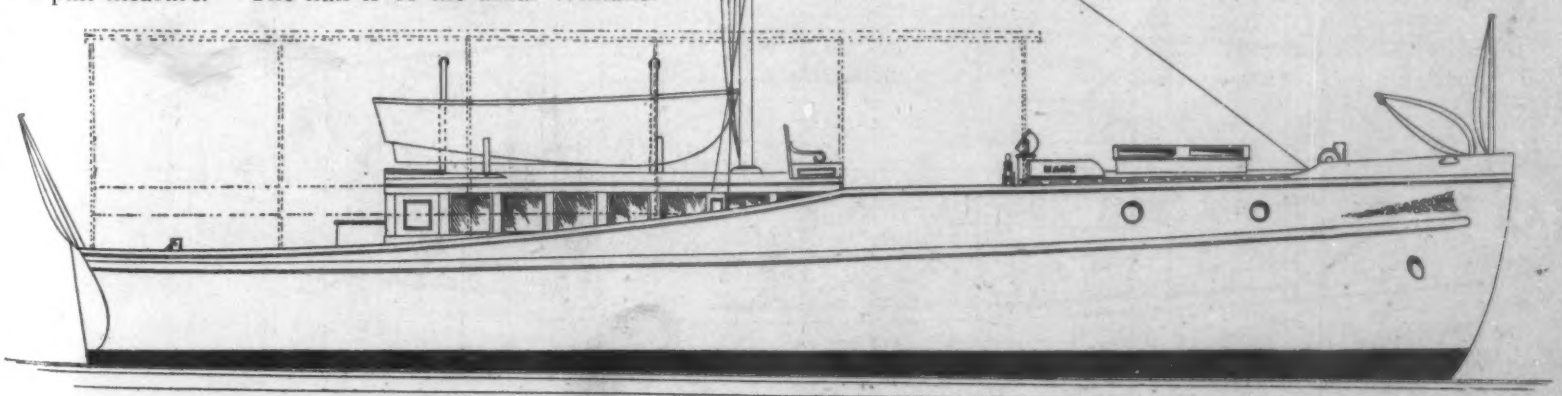
June 1 is the time set for delivery.

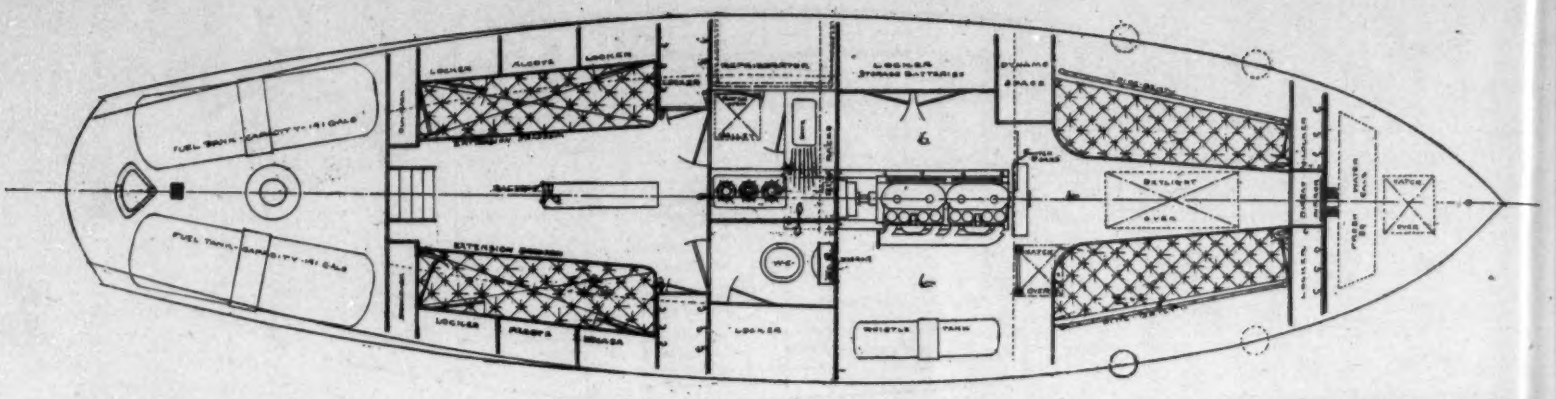


A Roomy 40-Foot Cruiser

ONE of the most comfortable and sensible power cruisers of moderate size that has come to our attention for some time is the 40-footer designed by Morris M. Whitaker, of Nyack, N. Y., for a New York yachtsman, the plans of which we publish.

She is in all respects a rational, sane boat, able and seaworthy, with a good, practical arrangement, not too crowded, though all the available space is used. As her designer says, "no attempt has been made to put a quart in a pint measure." The hull is of the usual Whitaker form, with a graceful, rounded stem and a pleasing sheer, which is apparent by reason of the rubbing strip which follows the sheer line at the clamp. She is a raised deck boat, with a protected deck between the forward and after cabins and a good-sized, flush after deck. She has about the maximum accommodations for a boat of this size, sleeping two on extension transoms in the after cabin, and from two to four in the



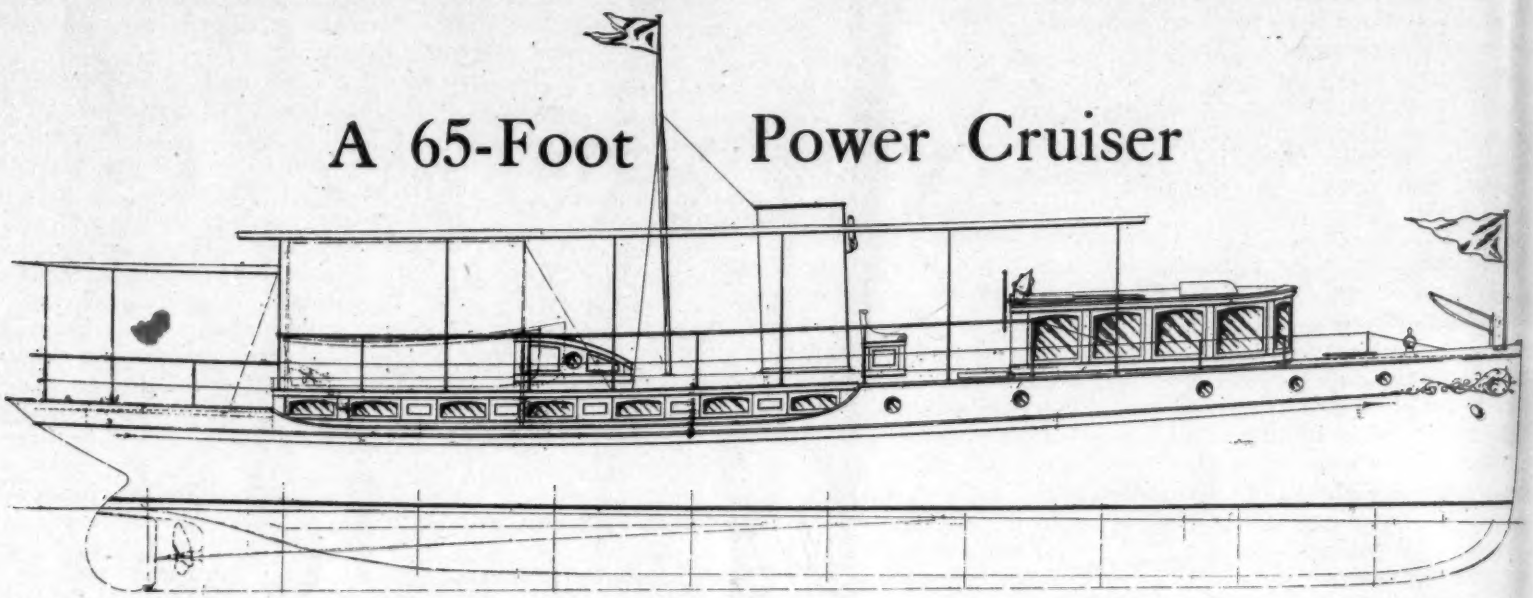


forward cabin on pipe berths and transoms. There is an unusual amount of locker and stowage space.

She is designed for a 24 horsepower, 4-cylinder, heavy duty Buffalo motor, which will give her a cruising speed in excess of 10 miles an hour. The construction is substantial and fairly heavy. Her dimensions are:

Length over all, 40 feet; length waterline, 37 feet 6 inches; beam, 10 feet.

A 65-Foot Power Cruiser



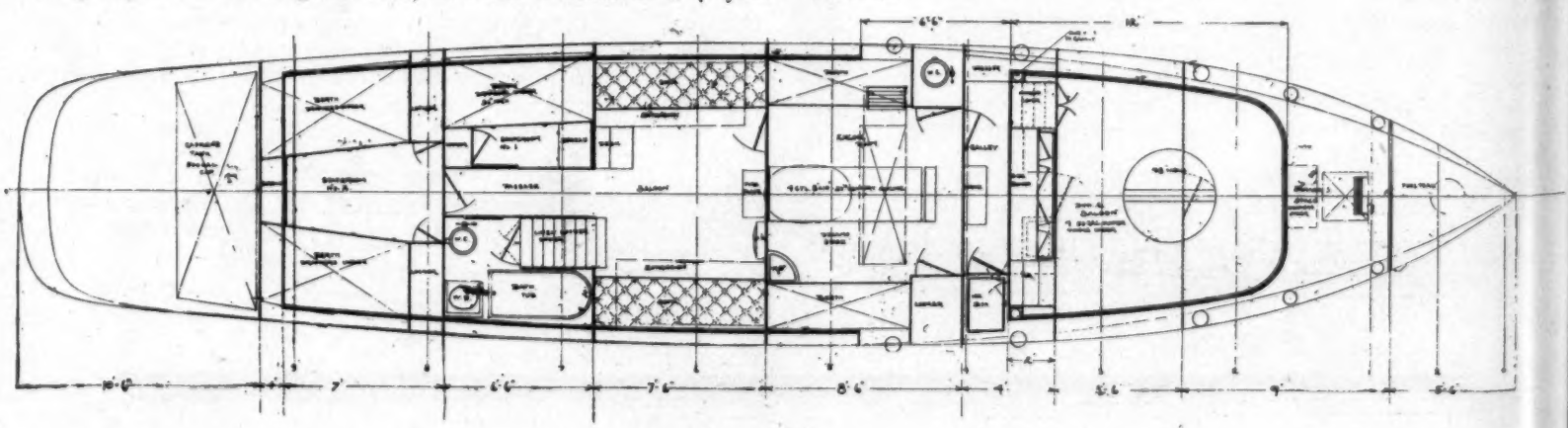
ONE of the interesting new boats of the year is the 65-foot power cruiser now under construction by the New York Yacht, Launch & Engine Company, of Morris Heights, New York, by whom she was designed. The boat is for a member of the New York Yacht Club, and is designed primarily to use in Maine waters, and was laid out to give good-sized and comfortable quarters below.

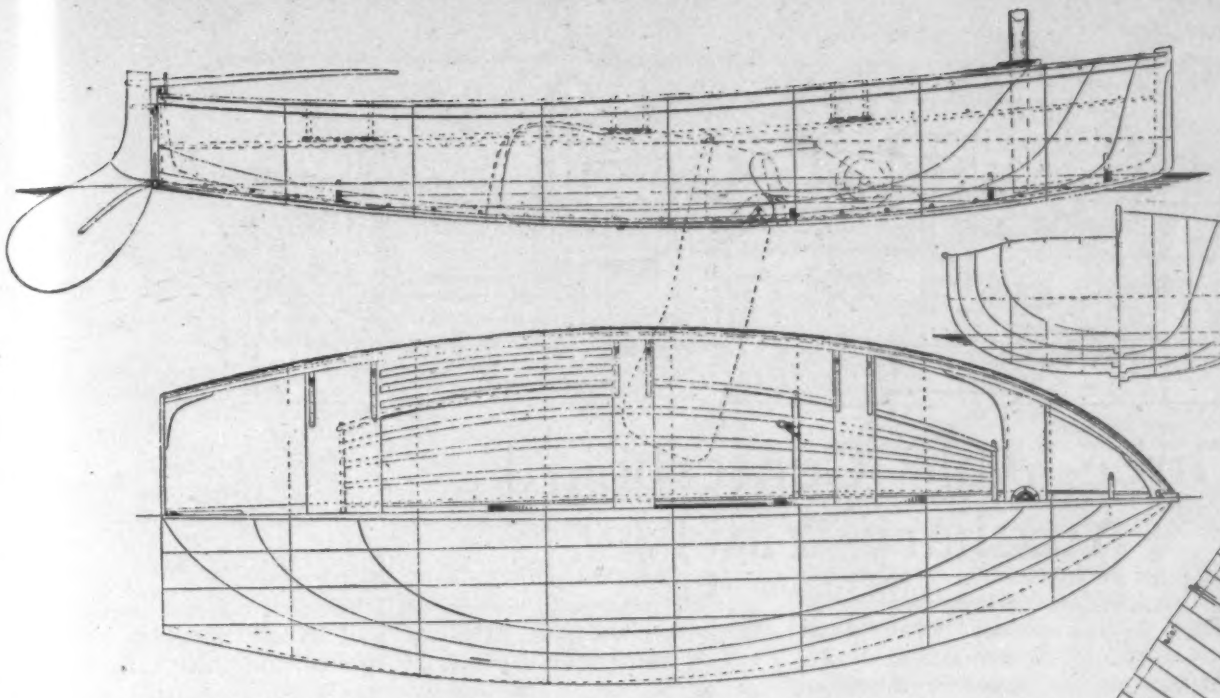
The dimensions of the boat are: Length over all, 65 feet; waterline, 60 feet; beam, 13 feet; draft, 3½ feet. There is a large, roomy deck house forward, which is rather a novelty for boats of this size, and which contains the dining saloon, the galley being just abaft of the house, but on the same level with the engine room floor, having direct communication with the saloon. Abaft of the galley comes the engine room, in which is installed a 4-cylinder, 8-inch by 10-inch Twentieth Century motor, which, it is estimated, will give the boat a speed of about 12 miles an hour.

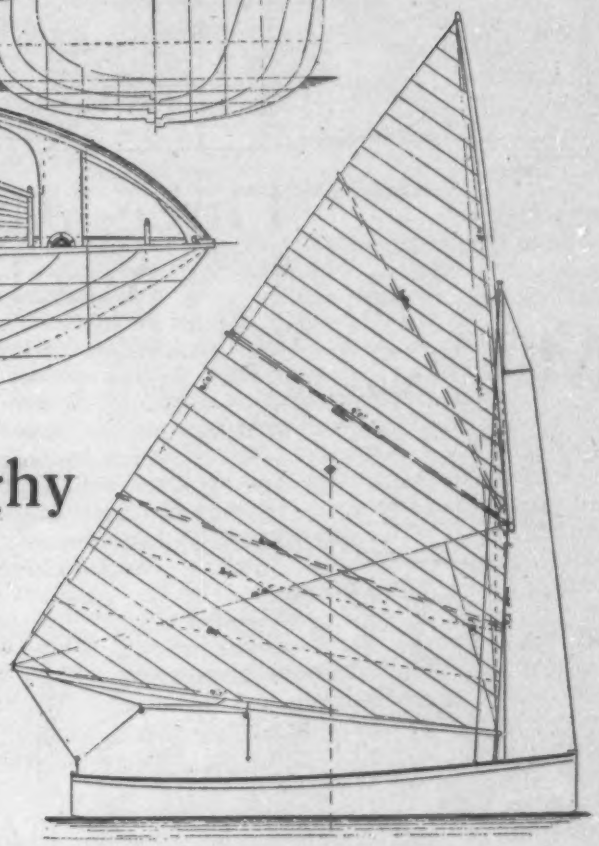
The balance of the boat is taken up by the owner's quarters, which are laid out to give a large, double stateroom aft the full width of the boat, with a single stateroom and a bathroom on either side of the passage leading forward to the saloon. This saloon is very attractively finished, having a built-in writing desk and fireplace and a folding wash basin.

The boat has an especially large and spacious deck, which is not cut up with deck house and deck openings, as on the average motor boat.

The lines of the boat are graceful and well turned, and she should be easily driven and, at the same time, show sufficient ability to go anywhere along the coast, from Nova Scotia to Florida.

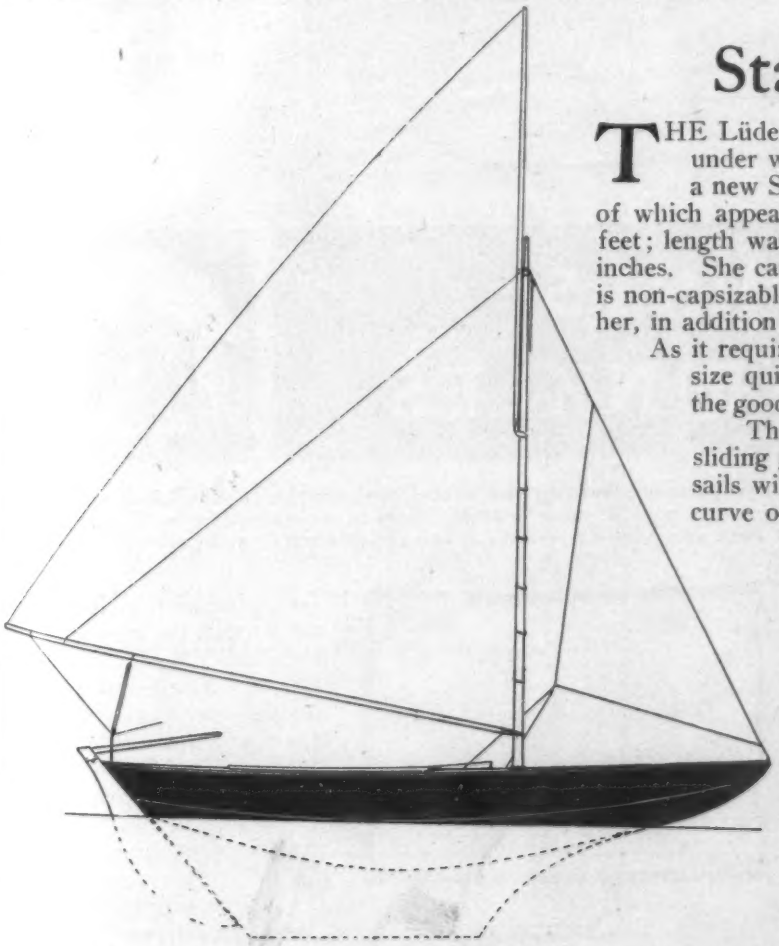






A 14-Foot English Racing Dinghy

AN interesting example of what British designers are turning out in the way of small racing craft will be found in the 14-foot dinghy of which the plans and elevation appear on this page. She is for a restricted class not to exceed 14 feet in over-all length and 140 square feet of sail area. It will be noticed that the length has been worked for all it is worth, as the bow is almost a ram and the stern is absolutely plumb. The beam is 4.9 feet and the draft 1.75 feet. The idea seems to have been to produce a boat which will be easily driven and carry a moderate rig. The way in which the centerboard is managed, as shown in the cut, is highly original, and succeeds in giving the necessary lateral plane, with, however, a very short fore-and-aft dimension, so that the boat will be very quick in stays—virtually pivoting upon the narrow board.

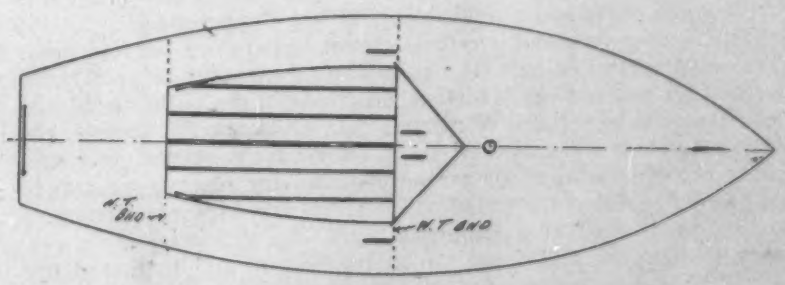


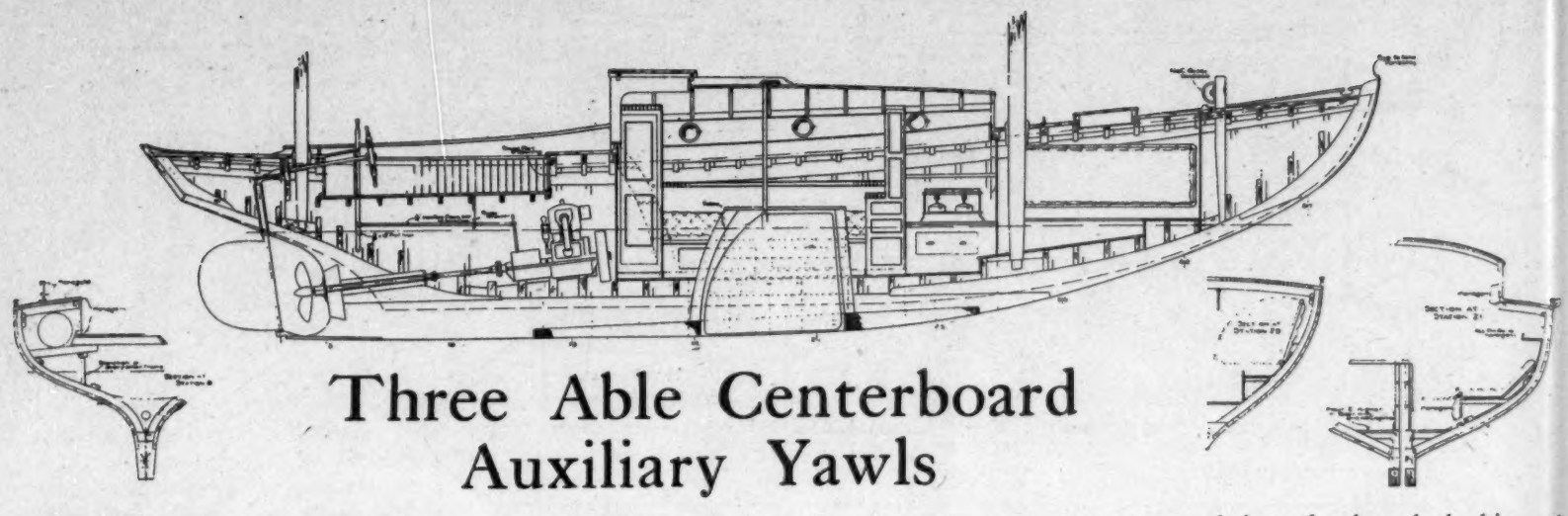
Stamford "Red Wings"

THE Lüders Marine Construction Company, of Stamford, Conn., has now under way in its yard a number of small boats of the skipjack model for a new Stamford Yacht Club one-design class. This little racer, drawings of which appear herewith, has the following dimensions: Length over all, 14 feet; length waterline, 10 feet 6 inches; beam, 4 feet 10 inches; draft, 2 feet 6 inches. She carries 270 pounds of ballast, and has a sail area of 96 square feet, is non-capsizable and non-sinkable, with wood enough in the construction to float her, in addition to two water-tight bulkheads.

As it requires very little breeze to make a lop which will give a boat of this size quite a dusting, the seaworthy qualities of the skipjack model and the good sheer are especially commendable.

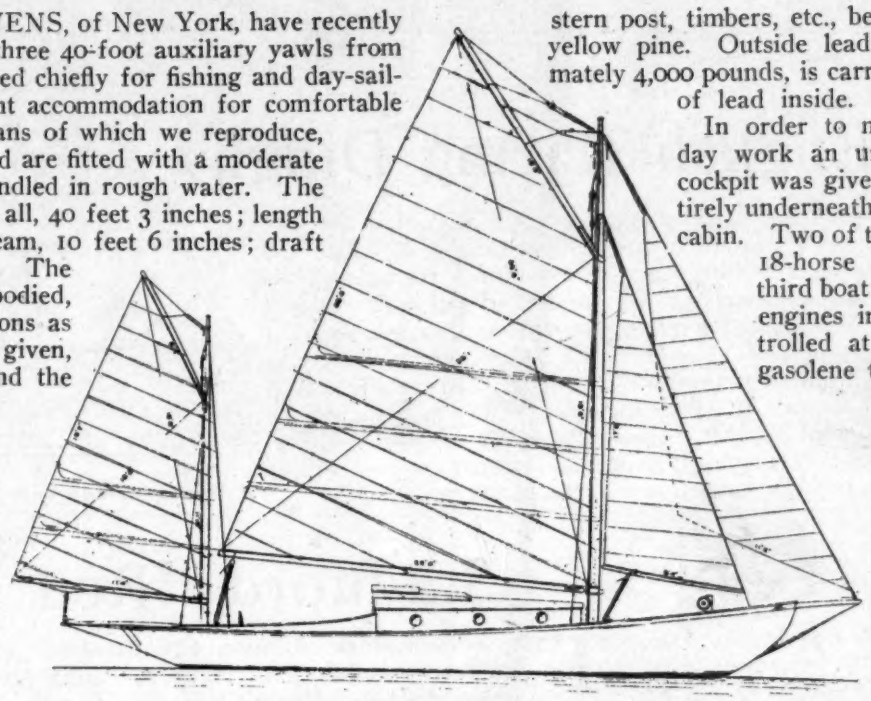
The mainsail hoists with a single halyard, and is, in effect, a modified sliding gunter rig. The class name is derived from the fact that tanned sails will be carried. There is something unusually attractive about the curve of stem and the raking stern, as shown in the elevation; and there is no doubt that the little vessel will prove an able sea boat for her size. She forms an interesting contrast with the dinghy, above, which makes no pretense of being anything but a little, open boat with sails.





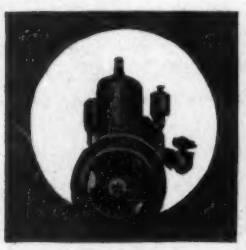
Three Able Centerboard Auxiliary Yawls

MESSRS. COX & STEVENS, of New York, have recently placed an order for three 40-foot auxiliary yawls from their designs to be used chiefly for fishing and day-sailing, though they have sufficient accommodation for comfortable cruising. These boats, the plans of which we reproduce, are of the knockabout type, and are fitted with a moderate sail plan so as to be easily handled in rough water. The dimensions are: Length over all, 40 feet 3 inches; length waterline, 32 feet 6 inches; beam, 10 feet 6 inches; draft without board, 3 feet 6 inches. The sections show a good, full-bodied, able boat, with as sharp sections as possible on the dimensions given, and, as the sheer is lively and the freeboard rather high in proportion to the over-all length, they should prove unusually good seaboats. This was necessary, as they will frequently have to go in and out over a bar on which there is usually a heavy sea. The construction is such as to make them long-lived and durable the keel, frames, deadwood, stern post, timbers, etc., being of oak and planking of yellow pine. Outside lead ballast, weighing approximately 4,000 pounds, is carried, and about 1,200 pounds of lead inside.



In order to make them comfortable for day work an unusually large self-bailing cockpit was given them, the motor being entirely underneath this cockpit and clear of the cabin. Two of the boats are being fitted with 18-horse Sterling engines and the third boat with a 10-horse Sterling, the engines in all cases being fully controlled at the steering wheel. The gasolene tanks are carried under the deck beams outside of the cockpit, and are made of seamless pressed steel.

The cabin extends from the commencement of the cockpit to the mainmast, and has on each side a full-length berth, wardrobe and a bureau, and also on the starboard side a sideboard.



USEFUL HINTS & WRINKLES

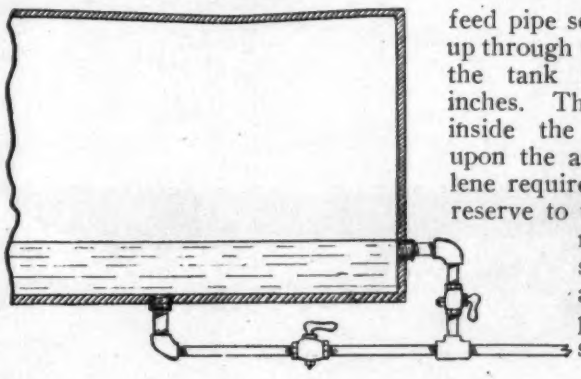
Under this head we will publish short articles from the readers of YACHTING, describing original ideas they have worked out for improving the efficiency and handiness of their boats and engines. These will be paid for at space rates. Articles must not be over 500 words in length, should be accompanied by ink drawings where possible, and must be addressed to Editor of YACHTING, 141 W. Thirty-sixth Street, New York. Here is a chance to be a philanthropist by giving to other boat owners information on some of the handy wrinkles you have applied to your own craft.

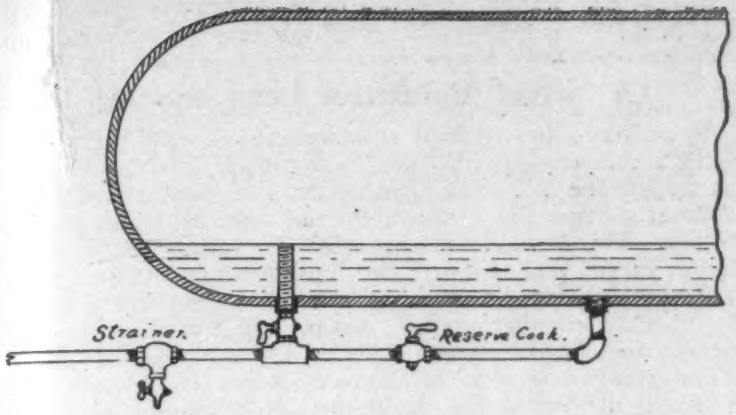
To Reserve a Supply of Gasolene

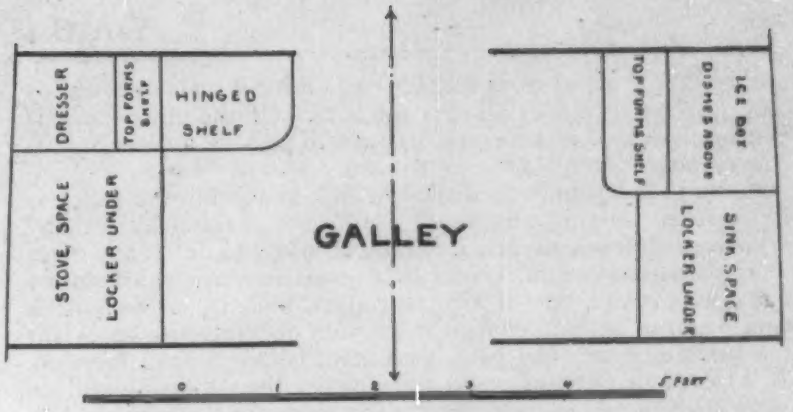
Among the power boaters there are probably few who have not run out of gasolene at some time or another, and probably the circumstances were most unpleasant, if not dangerous.

The writer has had one unpleasant experience of this kind. The wind was blowing half a gale when the engine stopped, with a lee shore not 100 yards distant, and had not the anchor held, the result would have been disastrous. In consequence thereof, the following ideas were worked out. They have proved a great success: two simple methods are here shown for reserving a supply of gasolene so that the tanks will not run dry without warning.

One method is for a cylindrical tank. In this it is only necessary to have an additional tap at the bottom and to thread one feed pipe so that it screws up through the bushing into the tank three or four inches. The length of pipe inside the tank depends upon the amount of gasolene required to be held in reserve to take you to the nearest supply station. The arrangement of piping is clearly shown, with a







strainer or separator in the pipe line to catch the dirt and separate the water. From the petcock it is also very handy to draw gasolene for priming.

The other method may be used on a square-sided tank, and is so plainly shown in the drawing that it requires no further explanation. It is an easy matter to figure out where the second tap should be in a square tank, as there are 231 cubic inches in one gallon.

With a cylindrical tank it is harder to figure the length of pipe necessary, but I have found a simple way of keeping track of the contents of a tank. Some time when filling put in a gallon at a time and measure it by inserting a stick in the filling cap and cutting a notch in the stick for each gallon. This makes a handy and reliable gauge.

Another advantage of this system of piping is that the water and dirt that may get into the tank will settle to the bottom, and should you be called upon to use the reserve supply a small quantity of gasolene may be drawn off at the petcock of the strainer when opening the lower valve, thereby assuring a clean supply at the carburetor.

H. W. LOWERRE.

The Small Boat's Galley

One of the most important considerations to the man contemplating building a power cruiser is the disposition of the galley. To meet the demand for a galley that has the maximum amount of room, convenience and utility is no small task. The power boat cruising man is coming more and more to see the advantage of a fairly roomy, clean, well-lighted and ventilated place in which to prepare the "three squares."

There are several excellent methods of arranging the layout of the galley. Generally speaking, there are two distinct ideas regarding its location—i. e., whether the galley shall be a part of, and combined with, the engine room, or whether it shall be a separate compartment. Many prefer it to be a part of the engine room, for the reason that all odors, grease, etc., are concentrated (not a pun). Others prefer it separate, to keep it free from engine room odors, oil and dirt.

The separate galley has many points in its favor. Nevertheless, there are a great many successful boats in which galleys are combined with the engine room. But these, for the most part, are large cruisers, anywhere from 50 feet up, in which the engine rooms have been sufficiently large to accommodate a galley conveniently, in addition to the engine, tanks, tool lockers, etc., and where the room for a separate galley cannot be spared. Unless at least three feet fore-and-aft length can be given up to a galley it becomes impracticable. But even if one is obliged to cut a few inches off the cockpit and main cabin the pleasure of being able to cook in a clean, light, airy place more than compensates for the sacrifice.

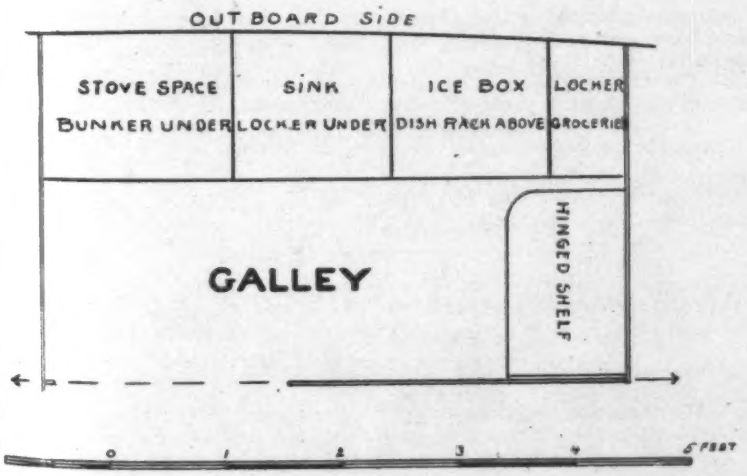
The separate galley also offers less danger from fire, as there is no chance for open flame to ignite any free gasolene which may leak out of the carburetor.

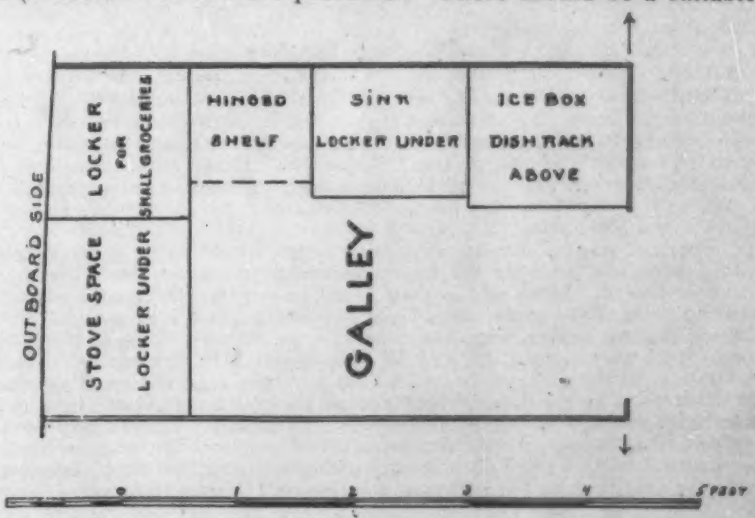
Until within the past year or two less consideration seemed to be given to the disposal of the galley than to any other feature of the boat. It was stuck alongside a dirty, greasy engine, leaving, perhaps, only a few inches each side in which to walk. This, with the sickening, disagreeable odors and the hot and often ill-ventilated engine room, was enough to turn the stomach of even a hardened sea dog. Yet it was under those conditions that most of our cruising was done. If it is possible, by all means have a separate galley, even in a small boat.

When once the location has been satisfactorily decided upon, the next question is its equipment with the proper conveniences.

A great many boats now have coal stoves. These little stoves are one of the most reliable means of cooking that can be had on a boat. A meal can be prepared quite as easily as on a kerosene or alcohol stove, and on a cold, raw, wet day it serves to warm up and dry out and make living cheerful and comfortable. When fitting out in the spring it is an excellent place to start up a fire and dry out the dampness and sweat that have collected through the winter. There are also various types of kerosene and alcohol stoves. Of late the alcohol vapor stove has proved popular with yachtsmen who wish a safe, clean stove, free from unpleasant odors, and one that will cook a meal in short order.

The amount of dirt and grease that will accumulate around a stove is surprising. It is almost a necessity to have the stove space lined with metal, preferably zinc. This does not rust, and it makes a first-class fire preventer. There should be a suitable





coal bunker if a coal stove is used; coal on the floor is most untidy and the dust is tracked all over the boat. On the other hand, if you burn alcohol or kerosene, be sure to provide a place for its safe stowage.

As to galley plumbing, without a sink and pump the galley is incomplete. A sink about 12" x 16" would fulfill almost any ordinary requirements, and it is false economy to put in any other than a first-class outfit. Next to a porcelain sink, which can be had for boat use, one of zinc or copper, built in, is best. This sink ought to be high enough to provide underneath a space for the storage of pots and pans, with stout hooks to hang them on. A water tank installed some place higher than the sink will do away with the necessity of having a pump, which is more or less of a nuisance, as it is invariably out of order. The greatest care must be taken to get the connections tight.

A drop shelf that can be folded out of the way when not in use is a most convenient affair. Food can be prepared on it, and at all times it affords a good place on which to set things. Numerous hooks, the kind known as cup hooks, are quite indispensable. They save many of the little odds and ends from kicking about. Dish racks may be built in on top of the ice box, and, if possible, a rack for glasses. Every inch that can be utilized for building in lockers for storing small groceries will never be wasted. One of the hardest problems on board a small cruiser is to keep the small groceries dry and palatable. These little things count for much, because room on a small boat is reckoned by inches.

It is a mistake to build an ice box that is not large enough to accommodate a fairly large piece of ice and a reasonable amount of provisions. Zinc is probably the best material to line this with. The sketches herewith give an idea of some simple layouts for small boat galleys that have worked to advantage.

One can hardly expect to find all the conveniences of a modern kitchen in a 3 x 5 space, yet that amount of room is sufficient, and it is astonishing how much satisfaction can be derived from it when a little care is used in its planning.

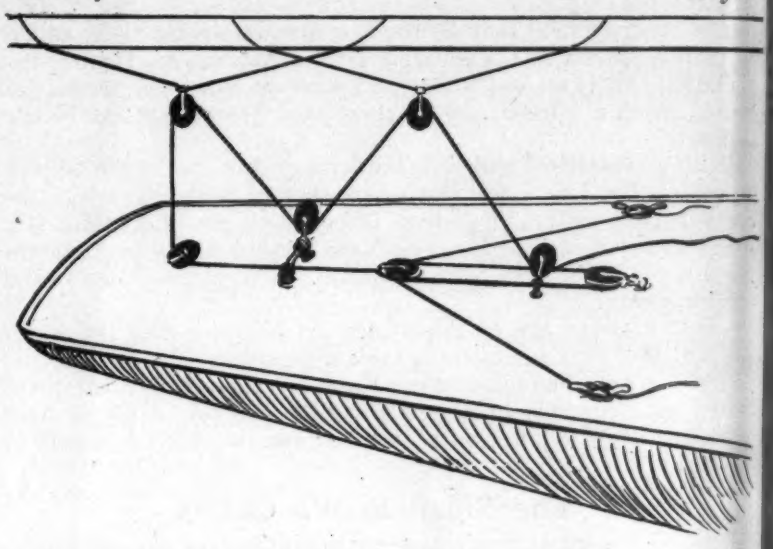
CHAUNCEY D. DAVIS.

A Novel Mainsheet Lead and Jig

An ingenious arrangement of mainsheet leads and jig is shown in the accompanying cut. This is a four-part purchase with a short jig on one end. The jig being also four-part, the mechanical advantage obtained in flattening the sail down by its use would be 16 to 1. This would make it possible for one moderately strong man to exert a pull of nearly two tons on the boom when getting in the last few feet of sheet. It will be noticed that the ends of the jig belay on either quarter, thus making it easy for the mainsheet tender always to slack off his jig first in paying out sheet.

The arrangement of the bridles on the boom is to be commended, in that it distributes the strain through a considerable length, thereby tending to prevent buckling or sagging at the outboard end—either of which will pull a sail out of shape and impair its efficiency.

R. J.



IN this Department we will answer questions concerning the problems which boat owners are constantly running up against in the operation of their motors or the handling of their boats. Theoretical as well as practical questions will be answered promptly by mail, and when of sufficient interest will be printed for the benefit of YACHTING readers. This service is free. Don't hesitate to make use of it. Address, Information Department, YACHTING, 141 W. 36th St., New York City.

Handicapping Dinghies

LOCKPORT, N. Y.

Will you please advise me through your experts what handicap a 14-foot sailing dinghy (leg of mutton rig) would have to give a 12-foot class with lug rig. The 14-footer's sail area is about 140 square feet and the 12-footers about 100 square feet. These two classes have never sailed against each other, and intend to have a series of races this summer for a cup.

J. E. E.

The best way of handicapping these boats would be by some simple rating formula rather than the present universal rule, as the latter is rather too complicated. Inasmuch as your boats have practically no overhangs and are both of the centerboard type, I would suggest a simple rule like the old Seawanhaka rating rule, which is as follows: Length plus the square root of sail area, divided by two, equals a yacht's rating. With this rating for the different boats I would apply the regular time allowance tables as used by the Long Island Sound Yacht Racing Association and practically all other racing associations in this country. These tables show the time that a boat of one size must allow another, figured in seconds per nautical miles. The only difficulty with this is that the time allowance tables as published do not go below a rating of 15 feet. However, I have figured roughly the ratings of your two classes as you gave me the figures, and have worked the table down to cover these two sizes. Here are the figures:

The time allowance is based upon the assumption that, under average racing conditions, a yacht of rating measurement, R, will sail one nautical mile in the number of seconds given by the formula, $\frac{2160}{R} + 183.63$ seconds.

Your 14-foot class would rate as follows:

$$\frac{14 + \sqrt{144 \text{ sq. ft.}}}{2} = 13 \text{ Rating}$$

while the 12-foot class would work out like this:

$$\frac{12 + \sqrt{100 \text{ sq. ft.}}}{2} = 11 \text{ Rating.}$$

Working this out gives 421.97 for the 13-foot class and 474.23 for the 11-foot class, *the difference of 52.26 being the number of seconds that the 13-footers would have to allow the 11-footers for every mile sailed.* It

might be well, however, to measure your boats and the sail area accurately and to work this over again to get it absolutely exact with the measurements of the boats.

If you will furnish us with the exact measurement of the two classes we would be glad to work out the exact table of time allowance under these rules and send it to you, though it will vary slightly from the figures given.

A Question of Pitch

PROVIDENCE, R. I.

If you have room in your next issue please tell me if I can get more speed out of my glass cabin boat, which is 22 feet long by 6 foot beam. I am using an 18-inch diameter, 24-inch pitch propeller and go about 7 miles an hour. I cannot use a larger wheel, but could I not increase the pitch, as I can go faster when facing the wind? When the wind is at her stern the engine does not run as smooth. I am using a 5-horsepower Mianus. How heavy a mooring would I need of the mushroom type and how much chain? I moor in a cove and have a good chance to let the boat swing as much as I need. W. H. R.

If your boat "runs away from the engine" in a following sea it would seem to indicate that a greater pitch of propeller might be used to advantage.

Before making any change, however, we would advise you to correspond with the makers of the engine, giving them as much data as you can in regard to the model and displacement of the boat, because they know better than anyone else what size and style of propeller a given engine should have when installed in any sort of boat.

You would need about a 75 to 100 pound mushroom if you are anchored in a fairly sheltered cove. The chain should be about four times the depth of water if you have lots of room. If not, three times would be sufficient, with a slightly heavier mushroom.

Ballast and Anchor for 21-Foot Sloop

CHICAGO, ILL.

I have a sloop 21 feet long over all, and of 3 feet 9 inches draft, and would appreciate the following information:

(1) There is between 250 and 300 pounds of lead on keel. Do you think this is sufficient ballast to make her noncapsizable?

(2) What diameter and length of cable and what size anchor would you advise for a boat of this size? J. F. M.

As you do not give sail area, it is impossible to advise you accurately in regard to the amount of ballast. Two hundred and fifty to three hundred pounds lead in the keel ought to be sufficient with the weight of the crew on a boat of this size, if she has fair beam and is not over-rigged. I should think you might carry 150 feet of sail on a boat of this size. She will not be uncapsizable unless the boat is decked over and has a watertight cockpit so that she cannot fill.

In regard to weight of cable and anchor, I would say that a 25-pound anchor would be big enough, and a 5/8-inch diameter manilla cable would be large enough to hold it. You ought to have about 20 fathoms of rode.

Propeller to Go with Automobile Engine

NEW ORLEANS, LA.

Please advise me as to the proper size and pitch of screw for my 47-foot (overall) express launch. The hull was originally engined with a reciprocating steam outfit and has very fine lines; beam, 6 feet; draft, 2 feet. It has occurred to me that I might be able to use an automobile motor in her. I have one which develops 40 brake horsepower at 1,000 revolutions per minute and rather more than that at higher speed, but I imagine 1,000 revolutions per minute is about as high as a propeller can be turned over without loss of efficiency. Please let me know what you think about it, also what size of propeller to use. What speed could I expect? D. L. G.

We believe that a substantially constructed automobile engine would be quite satisfactory in a speed boat of this type, as it is evident from her draft that she must be very light. Would advise a 3-bladed propeller of 24 inches diameter with 20 inches pitch. Making due allowance for slip of wheel, this propeller ought to give you a speed of 12 knots or better at 1,000 revolutions per minute.

For an Able Small Sailboat

SIMSBURY, CONN.

Could you let me know whether you consider any of the various types of sailing dories as good sea boats? If you do not, is there any type of cheap small boats that could be used for sailing in all reasonable weather? W. S. C.

The conventional fisherman's dory, while a very able sea boat when under oar and properly handled, is at the same time a somewhat "cranky" boat under sail and is not particularly safe in the hands of inexperienced people.

The sailing dory is a modification of this boat with somewhat rounded bilges and a flat floor, furnishing more stability. It has, however, but little freeboard amidships, and ships water easily when hove down in a breeze.

A decked dory is a much better proposition as far as safety goes, and we would refer you to the little 18-footer described in our March issue. We believe that a boat of this type, with good bearing surfaces, will be reasonably safe in any weather you care to be out in, although, of course, it is only an open boat and would capsize if filled.

I should think that the most seaworthy type of small boat, although not built in stock by any concern, would be a V-bottom keel boat, 18 to 20 feet long and having about 3 feet draft, decked over. Such a boat could be built for a reasonable sum and could be designed to meet any particular requirements.

Electric Motor for Launch

NEW YORK CITY.

What size electric motor would a whaleboat-stern cruiser—length, 65 feet; beam, 12 feet 6 inches; draft, 3 feet 6 inches—require to make 12 miles per hour? The boat is to be run by storage batteries. Has the electric motor been tried in a boat of 65 feet? If so, was it a success, and is it not more cheaply operated than the gasoline motor? F. A.

Replying to your question as to electric motor for a 65-foot boat, we would say that while electric motors have been made for boats up to this size, they are practically prohibitive on account of the cost. It costs approximately from 75 to 80 per cent. more for a boat equipped with this kind of power than for a boat of the same size equipped with gasolene motors. Not only this, but storage batteries are very heavy and are constantly needing renewal and replacing, and hence will not give you the satisfaction of an internal combustion motor.

A Cruise to Nova Scotia and Newfoundland

NEW ROCHELLE, N. Y.

I am considering the feasibility of an extended cruise to the Eastward this summer, and I am coming to you for some information on the subject through your Mess Room Talk Department.

(1) Do you consider that a 30-foot waterline (42-foot over all) keel cruising sloop with moderate rig and a 10-horsepower auxiliary would be a suitable boat in which to follow the coast as far as Nova Scotia and possibly Newfoundland?

(2) What route would you suggest in going from Long Island Sound to Nova Scotia? Would it be advisable to make a straight run from Monomoy Point to Cape Sable, or would you advise following the Maine coast along to Bar Harbor and make the jump across the Bay of Fundy from that point?

(3) Are good charts obtainable for the Nova Scotia and Newfoundland coasts?

(4) Can gasolene be bought along the way, and, if so, how does the price compare with that in this country? L. C. M.

These questions are, or ought to be, of so great interest to our cruising yachtsmen that we are tempted to answer them here at length in spite of the amount of space required. It is a curious fact that American yachtsmen, who think nothing of an off-shore run to Bermuda or the West Indies, cannot apparently be tempted to go east of Bar Harbor, along a coast which offers one of the most interesting and delightful cruising grounds in the world. This is a prejudice which ought to be overcome, and possibly an answer to the above questions will do something in that direction.

(1) The boat described above is plenty large enough to go clear to Labrador if you desire, provided she is of an able type—as you say—and is capably handled. You will encounter nothing worse on such a cruise than you would be likely to find in cruising around Cape Cod, and if the boat is fit to make that run she is perfectly capable of going the whole distance.

(2) If your time is limited, and you are anxious to get to the Nova Scotia coast as quickly as possible, we would be inclined to advise a straight run from Monomoy Point to Seal Island off Cape Sable. The distance is, roughly speaking, 200 miles—practically the same as that from Cape Elizabeth to Seal Island. This may not seem right, but if you will take your general coast chart, and swing your dividers around with Seal Island as a pivotal point, you will see that the arc of the same circle passes approximately through Monomoy and Cape Elizabeth. As soon as you get east to Cape Elizabeth, however, you begin to shorten the distance down quite fast; thus from Bar Harbor it is only 120 miles to Seal Island, and the Nova Scotia coast in the vicinity of Yarmouth will come in sight considerably earlier. The latter run, however, has the disadvantage that you encounter the full strength of the Fundy tides, whereas in going across from Monomoy Point you are sure to go clear of Seal Island if you lay a course directly for it, for the reason that around Cape Sable one ebb tide is as good as two floods to you.

(3) Excellent charts are obtainable of the whole region, published by the British Admiralty.

(4) Gasolene can be obtained at Halifax, Lunenburg, or any of the larger Nova Scotia ports, but its cost is considerably greater than in this country, varying with the difficulties of transportation.

[As the pressure on our correspondence column is constantly increasing, it is not possible to print more than a few of the communications received. Correspondents should therefore remember to enclose postage for a reply by mail.]

Amateurism and Cash Prizes

The question of offering and receiving cash prizes in sailing races was disposed of some time ago, and is now a dead issue, so far as sailboat men are concerned. Except in a few localities, and then only among the smaller class of boats, cash prizes are never given. In power boat racing, however, the question is still an open one, different practices prevailing in different parts of the country, and unless the matter is soon faced and settled much future trouble is in store for the motor boat racing fraternity.

The whole matter seems to hinge on the question of amateurism and whether in the future the sport is to be that of amateurs or professionals. If the latter, we have nothing further to say, except that it would seem a pity that a sport that might offer so much pleasure to the man who "boats" for the fun of the thing were to be restricted to those who go into it more or less as a matter of business. But if motor boat racing is to be kept free for the Corinthian or amateur skipper, then it would seem that the giving of large cash prizes and the offering of cash inducements for entries would eventually have to be abolished; for just as long as this continues the sport will be used for the promotion of business enterprises, and will attract those who may enter it for the publicity it affords and for the cash consideration. A class of professional or semi-professional helmsmen would be the result. Automobile racing split on just this rock, and the sport to-day is as dead as the crop of 1911 hydroplanes.

Contrary to the claims of those who favor cash prizes, money is not an inducement to those who race for sport. If proof is wanted of this assertion, one need only look at some of the "big" power boat racing meets of last year, where more money was offered than ever before. The scarcity of entries was lamentable, and most of those who did race were after something else than the mere sport. On the other hand, in those localities where cash was not given the racing, in many instances, was successful, more men took part in the events, and they were just as interesting for the participants (and in the last analysis they are the only ones that count), even if the fastest time of the year was not made. You can't tempt by money the man who goes into the game for the love of the thing, but you can tempt those who need the cash.

True, motor boat racing costs money; but that does not justify the claim that therefore it is right to reimburse by cash prizes the outlay a man may make. Every kind of sport costs something—money, energy, or a long time spent in preparation; and yet sport makes its principal appeal to men on account of the fun they get out of it. In long-distance races, where a great financial outlay in the actual running of the race is entailed, the practice may be permissible, but even this is a debatable question.

One of the larger power boat associations has recently taken the bull by the horns and faced this matter, and it is a satisfaction to note that at the discussion of the question, which was brought up, the clubs represented were almost unanimous in declaring for the abolition of cash prizes and in defining an amateur in the sport of motor boating in practically the same terms as a Corinthian in yachting or an amateur in any other sport. Other organized power boat interests would do well to take up this matter in the near future and thrash it out honestly and thoroughly.

A Pitfall for the Lawmakers

When landsmen attempt to make rules for the management of ships something ludicrous is usually the result—even when the landsmen in question are members of that august body, the Congress of the United States. This could not be better exemplified than by a bill now pending before the House, having been introduced by Representative Linthicum on February 1, which runs thus: "Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That: All motor boats engaged in towing other vessels in the bays, rivers and harbors of the United States or the Territories thereof shall be required *to carry the same number of licensed officers and men and have the same equipment,* and be subject to the same rules and regulations which now govern steam towboats employed in like service."

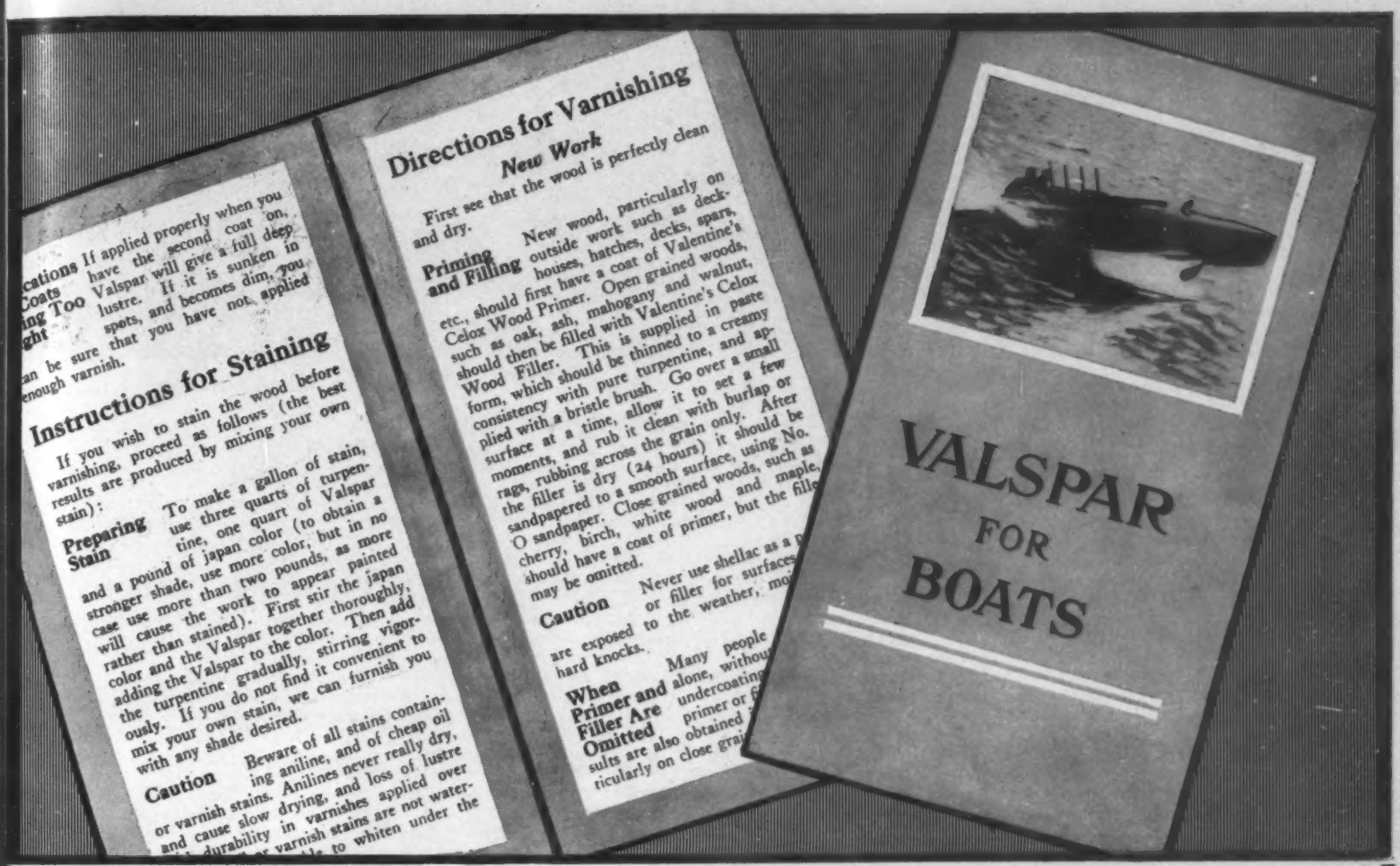
The italics are ours, but we doubt if they are really necessary—the wording of the bill is startling enough by itself. According to this refreshing bit of legislation, it would become a penal offense for the owner and navigator of a 25-foot open powerboat to tow a becalmed sloop or brokendown power craft into a harbor unless he had on board a mate, engineer, stoker, deckhands, etc., and had equipped his vessel with all the lights, signaling apparatus and other standard equipment of a full-fledged steam towboat!

In fact, our sailing friends who have solved the auxiliary power question by carrying a motor-dink must no longer use their convenient little "put-put" to yank the "ship" around if this bill becomes law, unless said diminutive towboat be fitted with davits on which are swung "lifeboats sufficient to carry her entire crew"—that being the regulation governing steam towboats.

Doubtless Mr. Linthicum would repudiate with indignation the idea of any intention that his bill should interfere in such a senseless manner with the harmless pleasures of the yachtsman. Yet such an effect will be the inevitable result if this bill becomes law and attains enforcement. It would, of course, be only the "joker."

It looks as if Mr. Linthicum were gunning for larger game: the commercial towboat field has been invaded by the gasolene and, more recently, by the oil motor. The chief bid for success which these boats make is their lower running cost, owing to the fewer number of men required in their operation. No doubt the steam towboat men, and especially the large towboat companies with a great capital invested in steam-propelled vessels, must view this new departure with something akin to consternation. In just the same way has every industrial improvement been viewed by the "old guard" ever since the invention of the first labor-saving device, but we do not notice that it has stayed the march of progress.

Still, there is always a danger of some manifestly discriminatory and unfair measure like this Linthicum bill becoming law if those of us whom it affects do not assert ourselves. Whether the bill is the result of crass ignorance in regard to matters marine, as was hinted above, or is a deliberate and crafty attempt on the part of "certain interests" to restrain a new effort of human enterprise, it certainly merits—in either case—the hearty condemnation it is receiving, in view of which it is probable that it will never be reported out of committee


cations If applied properly when you
Coats have the second coat on,
ing Too Valspar will give a full deep
ght lustre. If it is sunken in
spots, and becomes dim, you
an be sure that you have not applied
enough varnish.
Instructions for Staining
If you wish to stain the wood before
varnishing, proceed as follows (the best
results are produced by mixing your own
stain):
Preparing Stain To make a gallon of stain,
use three quarts of turpen-
tine, one quart of Valspar
and a pound of japan color (to obtain a
stronger shade, use more color, but in no
case use more than two pounds, as more
will cause the work to appear painted
rather than stained). First stir the japan
color and the Valspar together thoroughly,
adding the Valspar to the color. Then add
the turpentine gradually, stirring vigor-
ously. If you do not find it convenient to
mix your own stain, we can furnish you
with any shade desired.
Caution Beware of all stains contain-
ing aniline, and of cheap oil
or varnish stains. Anilines never really dry,
and cause slow drying, and loss of lustre
durability in varnishes applied over
or varnish stains are not water-
to whiten under the
Directions for Varnishing
New Work
First see that the wood is perfectly clean
and dry.
Priming and Filling New wood, particularly on
outside work such as deck-
houses, hatches, decks, spars,
etc., should first have a coat of Valentine's
Celox Wood Primer. Open grained woods,
such as oak, ash, mahogany and walnut,
should then be filled with Valentine's Celox
Wood Filler. This is supplied in paste
form, which should be thinned to a creamy
consistency with pure turpentine, and ap-
plied with a bristle brush. Go over a small
surface at a time, allow it to set a few
moments, and rub it clean with burlap or
rags, rubbing across the grain only. After
the filler is dry (24 hours) it should be
sandpapered to a smooth surface, using No.
0 sandpaper. Close grained woods, such as
cherry, birch, white wood and maple,
should have a coat of primer, but the fille
may be omitted.
Caution Never use shellac as a p
or filler for surfaces
are exposed to the weather, mo
hard knocks.
When Primer and Filler Are Omitted Many people
alone, without
undercoating
primer or f
sults are also obtained
ticularly on close grai
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Varnishing Metal Surfaces
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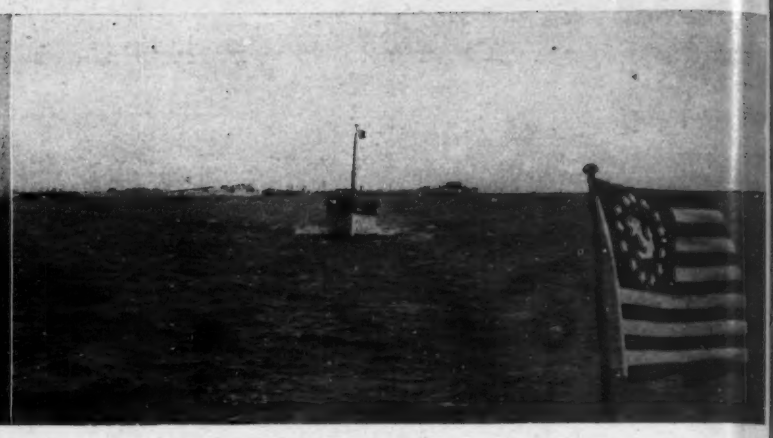

BERMUDA RACERS ENTERING PORT

Driftwood from Alongshore

Good Prospects for Bermuda Race

The date for the start of this year's Bermuda race for power boats for the James Gordon Bennett Cup and $1,000 cash has been definitely fixed for June 7. The race will, as last year, be under the auspices of the Yachtsmen's Club of Philadelphia, and will be started from that city, the finish being off St. David's Head, Bermuda, a distance of 734 nautical miles. The Royal Bermuda Yacht Club, of Hamilton, will have charge of the arrangements at the finish.

The conditions for the race are practically the same as those which have governed previous races, and the event is open to seaworthy boats not over 60 feet waterline length, nor under 39 feet waterline length. A seaworthy boat is a substantially built, full-decked vessel, having engines and living accommodations housed in and being equipped with all the tackle and appliances necessary to enable her to perform a long passage in open water. The rating will be calculated under the 1913 rules of the American Power Boat Association, with full time allowance.

It looks at present as if there would be a much larger fleet than has heretofore taken part in this race, and a very encouraging number of entries have already been received. These include the Dream, winner of last year's Bermuda race, owned by Commodore Lagen, of the Yachtsmen's Club; Barbara II, William M. Duncan, Staten Island Yacht Club, owner; Voyager, the 60-footer of A. P. Brush, of Flint, Mich., and Tec, a 40-footer, owned by W. T. Wheeler, of the Jamaica Bay Yacht Club.

Meeting of the Great South Bay Y. R. Ass'n

Some 125 members of the Great South Bay Yacht Racing Association attended a meeting and dinner of the Association on March 10 at the Hotel Brevoort, New York City. This was the first time that the Association had gotten its members together at a dinner, and the results were very gratifying to the executive committee, which had aimed to get the members of the different yacht clubs acquainted.

The Great South Bay Yacht Racing Association is composed of the following yacht clubs, all located on Great South Bay, where they are interested in fostering not only yacht racing but also interest in sailing and boating: South Bay Yacht Club, Babylon Yacht Club, Bellport Bay Yacht Club, South Side Yacht Club, Islip Yacht Club, Moriches Yacht Club, Unqua-Corinthian Yacht Club, South Shore Yacht Club.

In the five years of its existence the Association has brought about uniformity in yacht racing on the Bay, with the same set of rules governing each of the clubs, and has promoted inter-club racing instead of merely local affairs, with an Association cruise and a series of Association races. The dates fixed for this year's races and the places at which they will be held are as follows:

August 13, Babylon; August 14, Sayville; August, 15, Bellport; August 16, Patchogue.

The following officers of the Association and commodores of clubs were present:

President George E. Rice, of the Association; Commodore Francis Holmes, Commodore A. J. Mollenhauer, Commodore F. B. Dalzell, Commodore George Cox, Commodore G. Guttridge, Commodore Charles Southard, Secretary Joseph W. Lawrence.

Plans for the Perry Centennial

Twenty-five thousand dollars in prizes will be awarded by the Inter-Lake Yachting Association at the annual regatta at Put-in-Bay between July 20 and August 24. The events will be of a week's duration each and $5,000 will be awarded each week.

Sailboat week begins July 20, and will be followed by power boat week July 27. Aviation week will begin August 17, and the other water sports will be held during the week beginning August 24. The hydroplane and speed boat events will be held on the Maumee River July 28 and 29, for which $5,000 extra has been subscribed by Toledo to attract the best speed boats in America. On the morning of July 30 there will be a squadron sail from Toledo to Put-in-Bay, where the regular motor races will continue. It is estimated that at least 400 sail yachts will be in the Bay during this week. About 500 power boats are expected to contest during the following week, and the fastest hydroplanes and speed boats will enter the events.

Mohawk Yacht Club Elects Officers

At the annual meeting of the Mohawk Yacht Club, of Bridgeport, Conn., the following officers were elected for the coming season:

Commodore, A. B. Beers, Jr.; vice-commodore, G. F. Allen; secretary, J. R. H. Gebhardt; treasurer, C. G. Seward; board of governors, J. F. Deacon and C. Johnson; librarian, A. Lucksinger; fleet captain, C. F. Kraft; measurer, C. Johnson; regatta committee, C. Schmidt, Jr., F. T. Maloney, Dr. C. B. Adams, A. B. Beers, Jr., and J. R. H. Gebhardt.

Officers for St. John Power Boat Club

The annual meeting of the St. John Power Boat Club was held at the club headquarters, Marble Cove, St. John, N. B., on Tuesday, January 14. The reports submitted by the various committees showed that the club, although only three years old, has a membership of over 500, with more than 180 boats on the squadron list.

Commodore S. P. Gerow, who has held the office since the club was formed, was re-elected without opposition, as was also the secretary, Mayes Davis. In the election for the various other officers the results were as follows: Vice-commodore, Fred. Roberts; rear-commodore, F. L. Corey; treasurer, Cecil F. McLean.

The Commodore announced that he would present the club with a shield for a long-distance race to Oak Point and return (60 miles), to be held on Dominion Day, July 1. A large number of new boats are coming in to the club this year, among which will be the flagship Elizabeth, which was formerly flagship of the power boat division of the Boston Yacht Club.

Hempstead Harbor Yacht Club Elects Officers

The annual meeting of the Hempstead Harbor Yacht Club was held March 1. Officers were chosen for the coming season. John S. Appleby, who has been commodore for fourteen years, was re-elected for another year. Edward P. Titus was re-elected vice-commodore; Elwood Valentine, purser and secretary-treasurer; Charles T. Vincent, captain.

The club plans to figure largely this coming season in the Sound races, having a series for the "Gem" boats. Added improvements are to be made to the club house at Garvey's Point.

Knickerbocker Yacht Club Officers

At a meeting of members, held recently in New York City, these officers were elected for the year: Commodore, W. E. Spencer; vice-commodore, W. F. Duffield; rear-commodore, W. D. Griscom; secretary, J. O. Sinkinson; treasurer, George H. Cooper; measurer, W. C. Lieber; fleet surgeon, W. Peer, M. D.; board of directors, Rodman Sands, Harry Stephenson, W. Beam, Alfred Schoen and F. L. Kramer.

Officers for Sunset Yacht Club

At the annual meeting of the Sunset Yacht Club, of Los Angeles, Cal., held February 11, the following officers were elected for the present year: Commodore, Alexander J. Mitchell; vice-commodore, J. C. Farnum; rear-commodore, Morgan Adams; secretary, Francis Hay; treasurer, J. F. Meyer, and Eugene Overton and Charles Fink on the board of directors.

Psammiad Goes to Put-in-Bay

Psammiad, the speediest of the Inter-Lake Yachting Association's fleet of Class R sloops, winner of the Commodore Merrill B. Mills trophy in the annual long-distance race of the Toledo Yacht Club last season, and the possessor of many trophies and championships, now is the property of former Commodore William R. Huntington, of the I. L. Y. A., and present commodore of the Sandusky and Put-in-Bay Yacht Clubs. Commodore Huntington purchased Psammiad from A. J. Prentice, of Cleveland, and the craft will represent the Sandusky and Put-in-Bay Yacht Clubs in the races for Class R boats this season. She will be sailed by S. H. Lucas.

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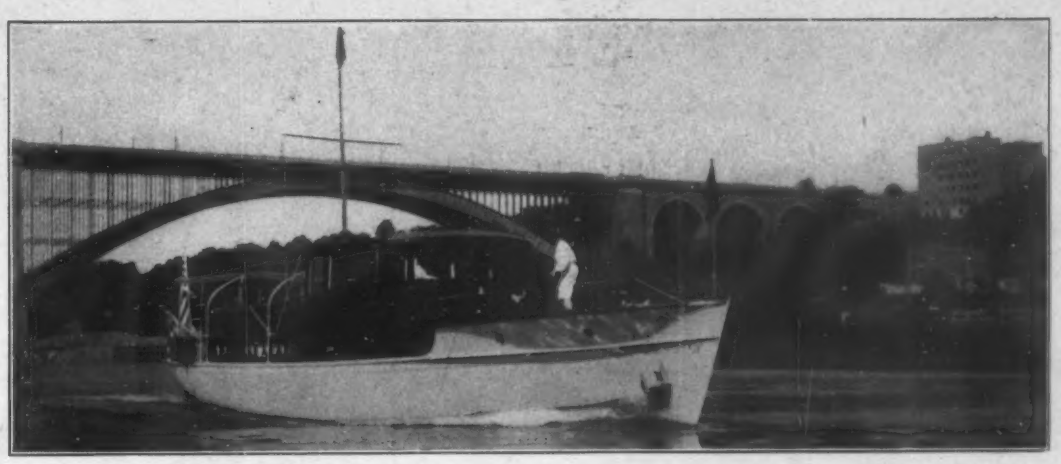

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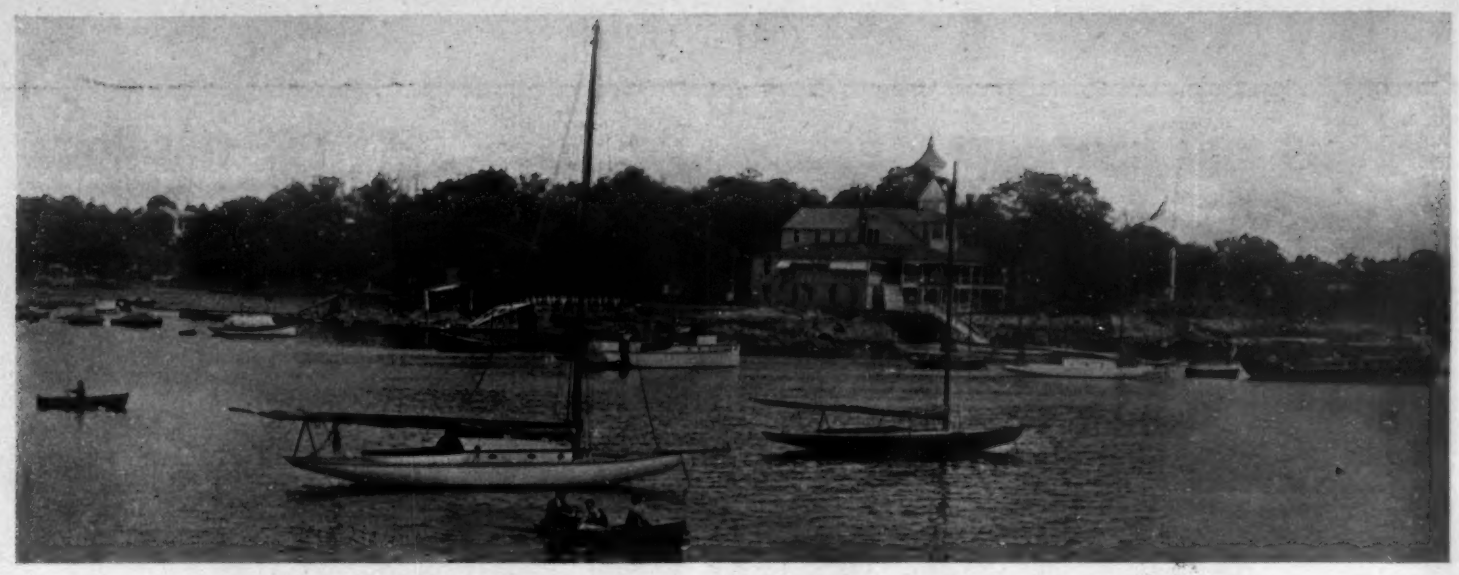

ECHO BAY AND THE NEW ROCHELLE YACHT CLUB

Activity at the New Rochelle Yacht Club

With the purchase of Harrison Island, the New Rochelle Yacht Club plans that this season shall be the most active in the history of a club that has long been known for its progressiveness—not the "T. R." brand of progressiveness, but the earnest, consistent interest in yachting and a determination to make the New Rochelle Yacht Club all that a yacht club should be. There is considerable talk among the members concerning the advisability of building a new club house, and in anticipation of their doing so the membership committee have undertaken to add 100 new members to the present membership, which is to-day larger than it has been at any time in the twenty-eight years of the club's history.

The membership committee have issued a very attractive folder illustrating and describing the advantage of membership in this club. A copy of this folder will be mailed upon request sent to the chairman of the membership committee, W. L. Van de Wiele, Stephanon Park, New Rochelle, N. Y. Echo Bay, New Rochelle, is the most attractive small, safe harbor to be found on Long Island Sound. We publish herewith a view of Echo Bay and the New Rochelle Yacht Club, taken from one of the boats in the harbor.

The members of the New Rochelle Club are among the most energetic and active sailors on Long Island Sound; the club burgee is seen in every harbor between Newport and City Island during the season. At the close of the active yachting season in November a gun club was formed for keeping up interest through the winter, and Harrison Island has seen a number of the members up every Saturday and Sunday.

Buffalo Sailors After Great Lakes Honors

The permanent organization of the Buffalo Yacht Club for the season of 1913 was completed February 27, when Commodore Elisha P. Hussey formally ratified the committee selections and approved a tentative programme of events. A new racing class was added, which will reinforce the local squadron of sailing yachts by at least three new racers. Two of these new racers will be built by individuals and one by a syndicate. This means that, for the first time in years, the sailors of the Buffalo Yacht Club will go on a mug hunting expedition at all the regattas this season on Lake Erie.

The complete organization of the Buffalo Yacht Club for this year is: Commodore, Elisha P. Hussey, M. D.; vice-commodore, Ernest A. Hazall; rear-commodore, William J. Gunnell; secretary-treasurer, Edward Sherlock; fleet captain, Jay E. Stagg. It was decided to hold the first regatta on Memorial Day.

The fast Q-boat Chaperon, designed by C. D. Mower and built by Robert Jacobs, of City Island, N. Y., has been purchased by a syndicate of members of the Buffalo Yacht Club to represent their club in the season's racing on the Great Lakes.

Bayside Yacht Club Appointments

Commodore G. Waldo Smith, of the Bayside (L. I.) Yacht Club, has announced the following appointments for the season of 1913: Fleet captain, C. D. Kells; fleet surgeon, Dr. C. B. Story; chaplain, Rev. Charles A. Brown; legal adviser, James A. Dayton; chairman of the house committee, Eaton V. Reed; chairman of regatta committee, W. H. McGregor; chairman of the entertainment committee, John P. Sloan; chairman of library committee, Austin Healy.

New Boats Now Building

A fast day cruiser for Mr. A. G. Chesebrough, of Northport, L. I., is under construction at the yard of the Luder's Construction Company at Stamford, Conn.

It is reported that there are to be a number of new Sonder class boats this season. Some of these boats are already under construction, while others are about to be laid down. It is expected that additions will come from New York, New Orleans, Chicago and Cleveland. The owners and designers of new boats are as follows: Charles F. Adams, 2d, Purdon; George L. Batchelder, Boardman; Joshua Crane and C. H. W. Foster, Boardman; Charles P. Curtis, Burgess; F. M. Hoyt, Gardner; John L. Saltonstall, Boardman; Galen L. Stone, Herreshoff; Charles A. Wood, Mower.

E. F. Hall, of the Atlantic Yacht Club, is having a $10,000 cruiser built at the yard of Britt Bros., at West Lynn, Mass.

A 48-foot power cruiser is ready for delivery to J. Hartley Merrick, of Philadelphia.

At the annual banquet of the New Haven Yacht Club, held January 28, subscriptions were obtained for six of William Gardner's Star class boats, which are now in the works at E. E. Crampton's yacht yard at Morris Cove. The members hope to have them at the starting line in the initial regatta of the club to be held on May 30.

A 212-foot steam yacht is being built by the Seattle Construction Company, Seattle, Wash., from designs by Messrs. Cox & Stevens, of New York, for Mr. D. C. Jackling, of Salt Lake City.

Mr. J. G. Alden, N. A., of Boston, Mass., has received an order for a 48-foot launch of the Pioneer type, which was described in the January YACHTING

Yachts Change Hands

The Hollis Burgess Yacht Agency, of Boston, Mass., announces the following sales this spring: Lawley sloop yacht Tabasco III, sold for Messrs. George B. and James S. Proctor, of Marblehead, Mass., to William J. McHough, Jr., vice-commodore of the Norwalk (Conn.) Yacht Club; the catboat Bantam, sold for Charles P. Adams, of Worcester, Mass., to a member of the Boston Yacht Club; the 44-foot motor boat Helen, sold for Fred. A. Porter, of Bangor, Me., to Fred. Schirmer, of Newton, Mass.; the 25-foot waterline sloop yacht Sentana, owned by G. W. Vialle, to R. T. French, of New York; 25-foot racing sloop Tiger, sold for George E. Carroll, of the South Boston Yacht Club, to Dr. B. F. Curtis, of Scarborough-on-the-Hudson; 35-foot waterline cruising yawl Narcissus, owned by Charles O. McClintock, of Portland, Me., sold to Dr. Coleman Tousey, of Boston; the catboat Twinkle, sold for Arthur Perrin, of Brookline, Mass., to Frederick Cunningham, of Longwood, Mass.; the 30-foot waterline schooner Fame, sold for B. B. Crowninshield, of Boston, to Vice-Commodore Roger Upton, of the Boston Yacht Club; the Friendship-built sloop Prowler, sold for L. M. Little, of Newburyport, Mass., to C. C. Kendrick, of New York.

Recent sales and charters of yachts reported through the office of Gielow & Orr include the following:

The sale of the gasolene yacht Tonopah, Mr. Richmond Levering, to Mr. James A. McKim, St. Louis, Mo.; the sale of the small schooner Daffodil, Mr. A. H. Morris, to Mr. Meredyth Whitehouse; the 55-foot Gielow designed auxiliary yawl Mariposa, Mr. Julien T. Davies, to Mr. Herbert H. Childs; the 56-foot waterline racing sloop Weetamoe, Prof. Charles Lane Poor, to the New England Iron & Metal Company; the 25-foot waterline sloop Skenawis, Col. William Carey Sanger, to Messrs. Lubschansky Bros.; the 56-foot motor boat Edith M., III, Mr. Leon S. Mendel, to Messrs. John Peterson and A. C. Iversen; the 40-foot waterline sloop yacht Gardenia, Mr. L. S. Herzig, to a Canadian yachtsman; also the charter of the 90-foot twin-screw motor yacht Dormarbea, Mr. W. H. Dowse, to Mr. C. A. Munn, for cruising in Florida and Cuban waters, and the sale of the 25-foot auxiliary catboat Marguerite, Mr. G. V. Caniff, to Mr. I. Halstead Patterson.

Others reported sold or chartered by the same firm are the sloop Triton, sold by Mr. W. Herbert Jennings to Mr. Hunt Hale; the sale of the steel steam yacht Haouli, Mr. F. M. Smith, to Mrs. Clara Baldwin Stocker. This yacht is 211 feet over all, designed by H. J. Gielow, and is the fastest single-screw cruising steam yacht of its size and accommodation in the world.

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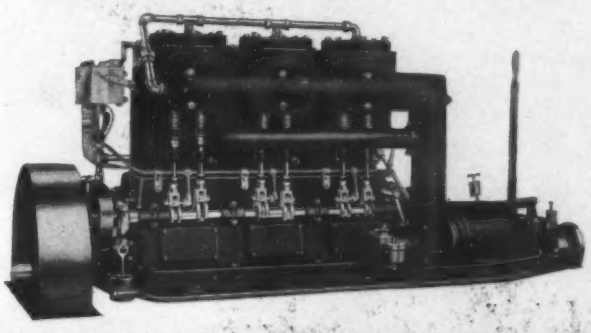

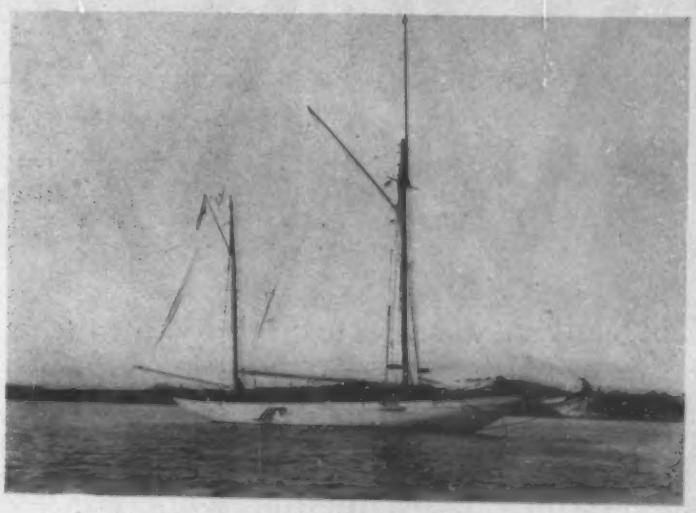

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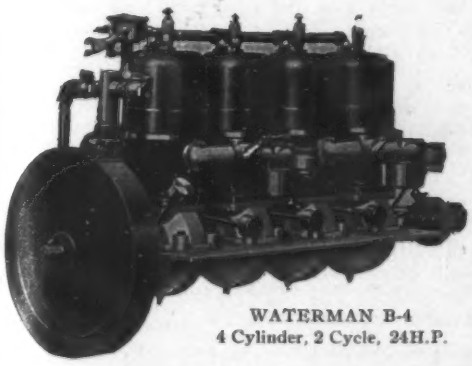

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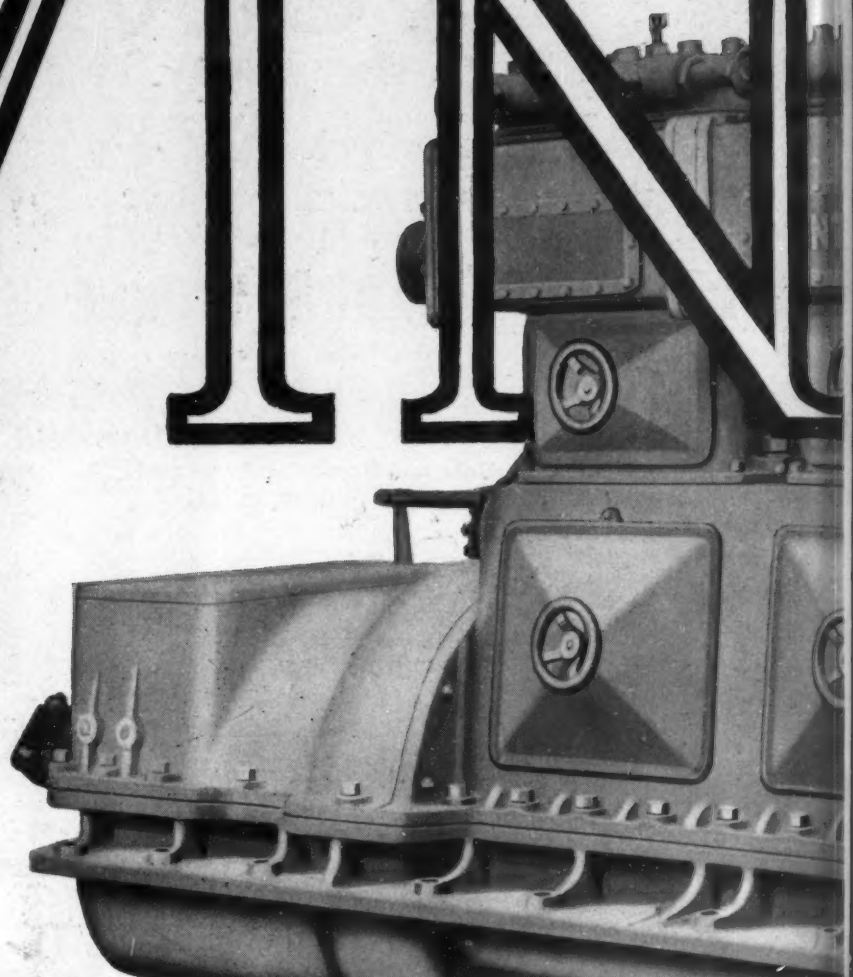

THE advent of Mr. Alexander Winton into the marine motor field marks an epoch in that industry. Since the inception of the automobile industry Mr. Winton's experimental work has been continuous, covering various turbine, two-cycle, four-cycle, revolving and reciprocating motors ranging from single cylinder to eight cylinders in a unit and utilizing practically every available hydrocarbon fuel.

WINTON-BUILT engines operated the plant of The Winton Motor Car Co as early as 1902 and continued in satisfactory service many years. In 1905 the first Winton marine engines were produced. Since then the scientific experiments have continued and data has been carefully compiled. In 1907 the six-cylinder vertical was accepted as the ultimate design. There has never been any guess work—no acting on impulse—no rushing on to the market. All the experimenting was done under Mr. Winton's eye and at his expense, not at the expense of the public.

It is quite generally known that Mr. Winton manufactured and sold the first practical and commercially saleable automobile. He is recognized to-day as the parent of the "six." Motor car manufacturers were slow in seeing what the keen perception of Winton pointed out as the future motor car. Winton motor cars have been started by a self-starter of his own design for years, while his competitors experimented and felt around in the dark. Again he pioneered, and even to-day, in a year of self-starters and "sixes" the Winton stands like the beacon light—showing the way: the old and tried, the reliable, the conservative and yet the progressive.

What wonder then that Mr. Winton should be jealous of his enviable position as one of the foremost designers of the age. What wonder that before he put his stamp of approval on a marine motor—to pioneer in a new field, he should put every theory, every feature of design in this motor to the acid test of practical trial. Some designers and some builders would have marketed Winton marine motors months ago and we know now that no mistake would have been made. However those months have been the final analysis and we now offer a line of marine motors which at the outset takes its position of leadership in its field, and upon which we are proud to bolt the name plate of WINTON.

The Plant

The plant and equipment of The Winton Gas Engine & Mfg. Co. are modern to the last degree. No stock equipment could be had to build such motors as comprise this line. Special machinery and tool equipment were designed and constructed especially for this big plant. The plant itself was laid out with due consideration to proper economy in handling such unusual manufacturing problems.

Then it was manned but not by ordinary mechanics. Men have of their own choice delcined employment in this plant when they learned of the requirements in skill and minute inspection; pronounced themselves unequal to the task. Every man is selected because of his proven ability in this class of work—a force of experts is the result.

Specifications and Features

Cylinders—Are of special analysis automobile cylinder iron, accurately ground to size with mirror smoothness. They are cast in pairs with removable heads.

Crank Shafts—Are forged from Chrome-Vanadium steel, heat-treated and annealed.

Pistons—Are of special grade heat-treated iron, fitted with three rings and ground to size.

Connecting Rods—Are drop forgings of 0.35–0.40 carbon steel, heat-treated. The piston end is provided with a tool steel-wrist pin which actuates on phosphor bronze bushings in the piston. The crank shaft end is machined to receive a die cast bushing of white brass.

Bearings—Crank shaft and connecting rod bearings are of Parson's white brass, considerable over-size, die-cast in our own plant. All other bearings are of phosphor bronze.

WINTON GAS ENGINE & MFG. COMPANY

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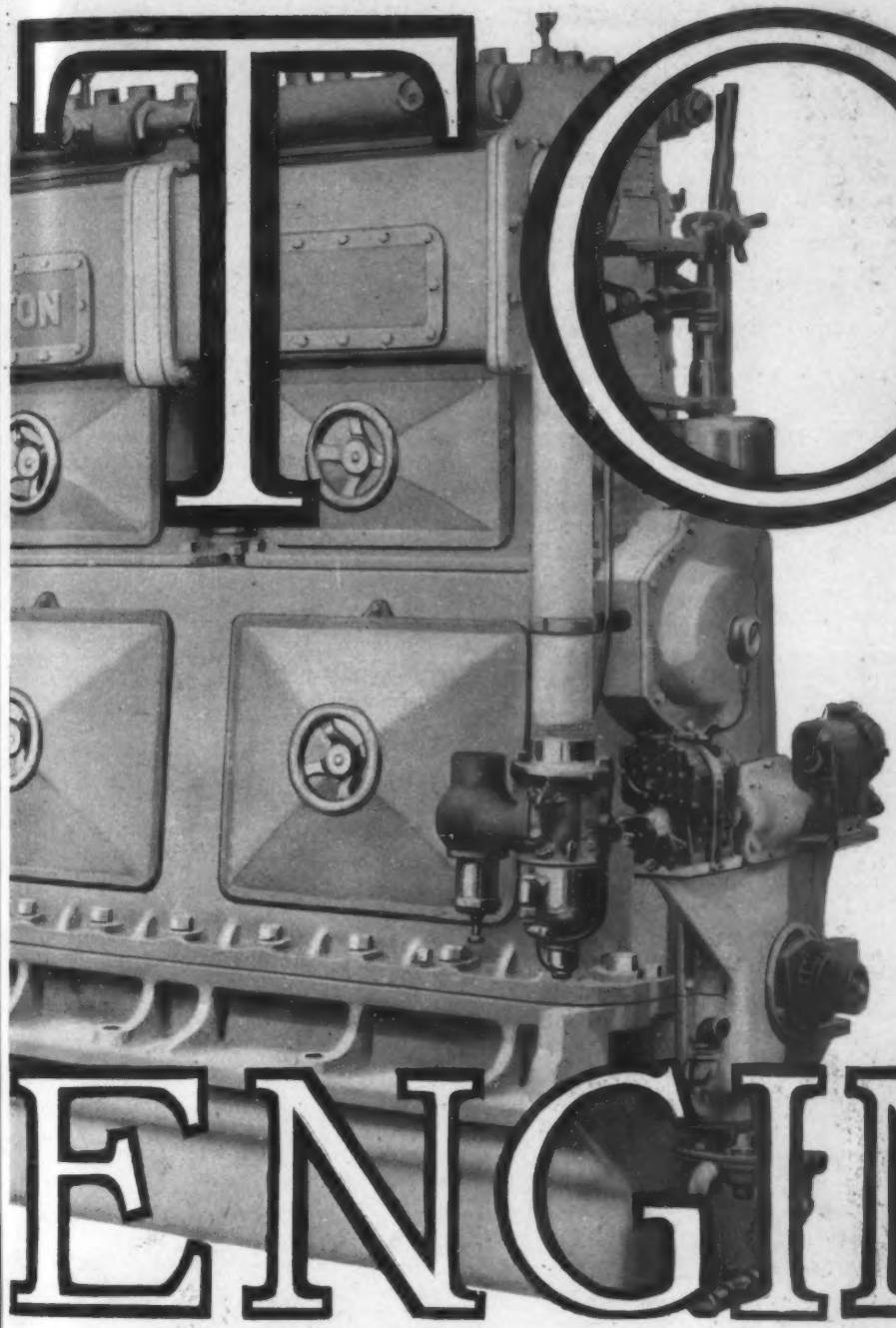

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Horse-Power -	60-75	100-125	150-200
Price - -	$3200	$5000	$6500
No. Cylinders -	Six	Six	Six
Bore - -	6½ in.	8 in.	9 in.
Stroke - -	9 in.	11 in.	14 in.
Rev. per min. -	400-500	350-450	350-425
Weight - -	5000 lbs.	8000 lbs.	15000 lbs.

To the man who is about to build a boat

You will of course be guided largely by your naval architect. He will doubtless bring Winton Motors to your attention. Should he lean toward some of the older lines, then, acting upon your American sense of appreciation of the pioneer, come with your architect to our plant or ask our sales-manager to confer with both of you in your office. You owe it to yourself. At any rate, get the facts which will be gladly mailed you when you ask.

Specifications and Features

Oiling System—The oil supply is carried in the enigne base and is distributed under pressure by a gear pump to every working part, after which it passes through a filter and is again circulated.

Ignition—Two systems Bosch low tension system, using magnetic make and break plugs and high tension magneto and coil.

Reverse Gear—In connection with our engine is used a spur reverse gear of Winton design. Gears and shafts are integral forgings of Chrome-Vanadium steel, heat-treated.

Manifolds—Water, fuel and exhaust manifolds are integral with the cylinder castings.

Cam Shaft Drive—Is by vertical jack shaft through worm spirals, which means a silent drive.

Valve Action—Is entirely housed and absolutely quiet. This is an exclusive feature of Winton Marine Engines and is obtained through special cam millers, designed and built by us for this particular purpose.

Water Circulation—By centrifugal pump driven from shaft with independent connections in cylinder heads with valves for regulating volume.

The Motors

The Winton marine motors are Chrome-Vanadium steel motors. This material, heat-treated and of ample proportions, is found in all the working parts which are subjected to heavy working strains.

In the design of these engines all manifolds, piping and fittings that are usually found on marine motors have been eliminated and all the working parts have been enclosed, yet can be inspected immediately. The fly wheel is removed from the front of the motor and housed in the after end, where it absorbs the strain from the propeller and shafting. The position of this wheel also eliminates the element of danger to the operator.

The ample proportions of the working parts, together with the weight of the motor located where it should be to take the jar and explosive strains, eliminate vibration. These are features that are of interest to the motor-wise public who demand smooth, quiet-running motors. Cylinders and pistons are the very best close-grained cast iron obtainable, heat-treated, even the small gears and pinions are hardened and tempered in oil and are of a high-grade steel.

We claim for Winton Engines that they are quieter and smoother in their operation than any marine engine ever built; that they operate with less noise and vibration than steam engines of like horse power; that they do not require the continuous attention of an engineer and are built for continuous operation of twenty-four hours a day.

To the Naval Architect

We realize that the greatest appreciation of Winton Motors will come from the naval architect—he who has made a life study of motor-driven craft and their power plants. Full and complete data is at your disposal. We are ever ready to co-operate with you. In a matter of the importance of this a visit to our plant with your client is not inconsistent. You will, perhaps, not only be gratified by what you see, but will get a new view point on modern marine motor manufacture.

1504 East 106th Street, Cleveland, Ohio

Consult YACHTING'S Information Department on any of your problems. Its service is absolutely free.

Of Interest to the Skipper

Upholstery for Your Cabin

In this day of tastefully decorated cabins in small boats there is no excuse for not having the best of furnishings in the way of cushions, upholstery, draperies, etc. Nothing does so much

Deck-house attractively furnished by M. W. Fogg

for the appearance and comfort of a cabin as attention to these details. In furnishing your cabin it is best to go to a regular marine upholsterer rather than to one who does not make a specialty of marine work, as the former understands the problems that a boat owner is up against, and can do a much more satisfactory job.

M. W. Fogg, of 202 Front street, New York City, has for years been one of the foremost marine upholsterers of New York City, and can provide everything for the cabin of the boat from cushions and curtains to willow deck chairs. With a thorough understanding of the requirements of the marine trade, Mr. Fogg can make up cushions, mattresses, etc., at short notice from owner's measurements, if necessary, and will be pleased to submit estimates on any upholstery work you may have. His prices for the best of material and workmanship will compare favorably with those of any other house. A very attractive little booklet has just been published by this concern, describing in detail the scope of its work, which may be had free of charge by addressing M. W. Fogg, 202 Front street, New York City.

New Sterling Distributors

The Sterling Engine Company announces to its customers and the motor boating public that it has made arrangements with the Byrne & DuBois Machine Works, of 118 Hudson avenue, Albany, N. Y., to handle Sterling engines in Albany and vicinity. These people are exceptionally well equipped to take care of a customer's wants in regard to installation, repairs, etc. Mr. George C. DuBois, of this concern, is a practical gasolene engine man, and is as well posted on boats of different classes and engines as anyone in the State. Anyone desiring to purchase a new outfit, or any Sterling customer, is assured of the best kind of attention.

A New Gray Catalogue

The 1913 catalogue of the Gray Motor Company has recently come to hand, and is not only a mighty attractive piece of marine engine literature, but an instructive and interesting one as well.

The front cover is a spirited reproduction of a boating scene painted in oil especially for the Gray Motor Company by William Harnden Foster. On the back cover are shown various types and sizes of boats in which Gray motors are being successfully used.

In laying out the catalogue the Gray Motor Company present the pertinent facts about their motors in a concise and thorough manner that will be sure to appeal to prospective buyers. They begin by telling the reader something about the Gray Motor Company and their way of doing business, and continue right along giving their manufacturing methods, showing actual photographs of the interior of their big plant, following every important operation necessary on the manufacture of a high-grade gasolene engine.

Then the catalogue takes up the various models and describes each in detail, illustrating the engine and putting the price in good, plain figures, and giving some facts regarding each particular model and the different places it can be satisfactorily used. The inside of every engine they manufacture is shown in a sectional view of every model. They have devoted space to lubrication used on Gray models, also to power, long life and economy, ignition, kerosene as fuel on certain Gray models, and a few pages to accessories furnished with Gray engines.

Fifty Years in the Marine Supply Business

All those yachtsmen who have ever bought their marine hardware and boat equipment from W. & J. Tiebout, 118 Chambers street, New York City, will be interested in knowing that on March 9 Mr. W. H. Force, of that company, completed fifty years of service with this concern, and that the members and employees celebrated the anniversary by presenting him with a very handsome

Silver Loving Cup presented by the employees of W. & J. Tiebout to Mr. W. H. Force on the Fiftieth Anniversary of his connection with the firm

silver loving cup. Mr. Force entered the employ of the firm as a boy on March 9, 1863.

In addition to the loving cup given by the employees there were several presentations, one of which, a handsome gold watch with a charm in the form of an anchor and compass, was given by John Tiebout, president of the company. The presentation speeches were made by Henry Mahler, Jr., for the active force, and B. T. Van Nostrand presented a gold cup on behalf of the employees not now with the house.

A Unique Ferry

An unusually interesting photograph of a unique type of boat is shown herewith. This is the Georgia-Carolina, which is operated between Savannah, Ga., and the landing of the Union Causeway Turnpike on the road to Beaufort County, S. C.

This boat is 95 feet over all, 22 feet beam, and draws from 3 to 4 feet. She is powered with a Buffalo 125-150-horsepower heavy-duty engine, six cylinders, 10 inches bore, 12 inches stroke, with a normal speed of 300 revolutions per minute. The Georgia-Carolina is so constructed that she can carry twelve automobiles besides her passengers at every trip. Her engine is installed amidships. There is a clutch at each end of the engine shaft. By disengaging one of these clutches and throwing the load on the other, the boat can be driven by either one of the two 40-inch propellers, one of which is at each end of the boat.

Ferryboat Georgia-Carolina, equipped with a 150-horsepower, heavy-duty Buffalo engine

A Business "Booster"

Thousands of business houses in every line have for years been putting out souvenirs, premiums and other inducements of one kind or another, designed to keep their memory green in the public mind. Far removed from this class, yet outdoing all of them in its lasting popularity, is the famous, time-honored Berry Wagon, which for over forty years has been one of the proudest possessions of succeeding generations of children.

There is no corner of the world where this little wagon has not penetrated. It has been dragged along by happy children over the smooth roads of France and the rough trails of the Australian bush; it has been the delight of the town-bred child and the chief joy of the Southern pickaninny.

The photograph shows a group of the latter getting some of the most fun possible out of the Berry Wagon. And on file at the Berry Bros. factory are other photographs from almost every

Berry Bros. wagon in the Southland

corner of the world. To-day the children who played with the Berry Wagon when it was a new thing are grandparents, but the coming generation are just as eager to own one.

Winton Engines for Marine Work

The cut published herewith shows the new Winton Six, heavy-duty marine engine being brought out by the Winton Gas Engine & Manufacturing Company. This will appeal strongly to the user of marine engines who demands quiet operation, a clean motor and a smoothly operating machine. The best materials available for the purpose are used in these motors, such as chrome Vanadium steel in the crankshafts and reverse gears, and other parts of same high grade.

Cylinders are ground to a finish as well as the working parts of the motor, and this is an unusual feature, as there are on the market very few, if any, large cylinders ground.

MAKING A SAFE LANDING WITH THE "BALDRIDGE"

Learn these big facts about the "Baldridge"

When you buy a new boat or equip your old one with a gear, insist on having a "Baldridge"—the gear with the unbroken main shaft. This means that the "Baldridge" main shaft is solid and extends through the gear from bearing to bearing. It can't get out of line—can't cause heating, binding, or undue wear of bearings.

Baldridge Reverse Gear

The unique way in which we make the "Baldridge" "idle" perfectly is typical of "Baldridge" thoroughness. In compact, neat appearance, the "Baldridge" will please. And of course it is enclosed—can't sling oil or catch your clothing.

"The gear with the unbroken main shaft".

Get the Baldridge Book—Gives all details

¶ If you are in the boat business, write for dealer's proposition.

The Baldridge Gear Co.
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Don't take chances. It may save your boat and life.

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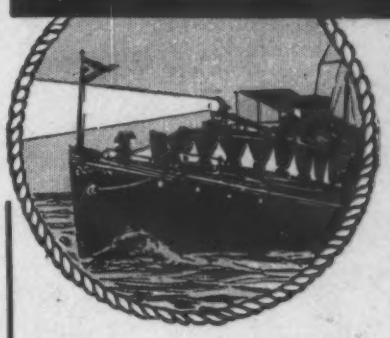

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is the time to figure on

Electric Lights for Your Boat

Don't go through another season with those weak, dangerous, smelly kerosene lamps in your boat.

Electric lights will double your pleasure, and their cost is probably much lower than you think. They are safer, cleaner, cheaper to operate, and altogether more pleasant in every way than oil lamps.

You really must have electric lights to enjoy a cruise as you should. In the evening, in the cabin, to read, play cards, sing at the piano, or to cook and eat by, electric light doubles the pleasure of the trip. It means real sociability for every one on board.

In rough weather, a turn of the switch turns on bow, port and starboard, riding and tail lamps, without moving from your cabin.

Have a Searchlight This Season

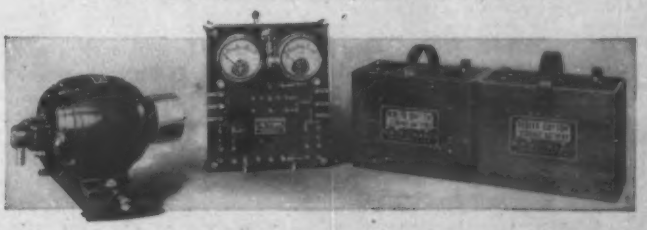
It's the only safe way to run your boat at night. It enables you to avoid collisions, make landings easily and safely, and adds to the pleasure of night running for the man at the wheel.

The Dayton system allows lights all the time, whether your engine is running or not. Gives ample ignition current of even voltage.

Get Complete Information at Once

Don't wait. Spring is advancing rapidly. Soon you will want to be out on the water. Every day counts. It will cost you nothing to learn about the Dayton Launch Lighting Outfits, and why today they are looked upon as the leaders in this field. Your letter will receive prompt attention. *Send it today.*

THE DAYTON ELECTRICAL MFG. CO.
99 ST. CLAIR STREET, DAYTON, OHIO



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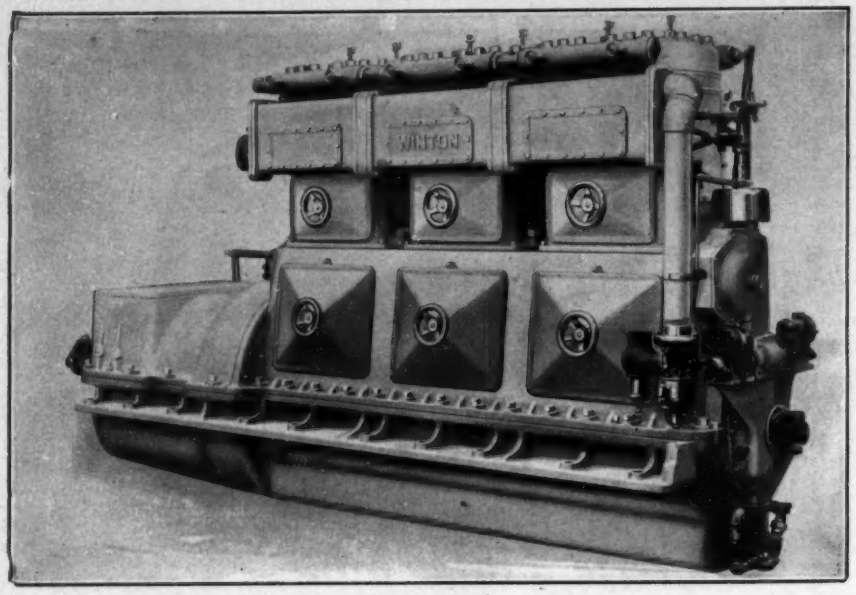

The new Winton SIX heavy-duty marine engine

The claims for this motor are that it is smoother in its operation and quieter than the average steam engine plant, and just as smooth and quiet as the high-grade automobile engine.

These motors are built in three sizes, 60 to 74 horsepower, 100-125 horsepower, 150-200 horsepower, all heavy-duty motors.

Catalogue and descriptive matter will be gladly furnished by the Winton Gas Engine & Manufacturing Company, 1504 E. 106th street, Cleveland.

Those who have followed the development of the gasolene motor in this country will be interested in hearing that Mr. Earl H. Croft, formerly of the Loew Manufacturing Company, of Cleveland, is now connected with the Winton Gas Engine & Manufacturing Company as sales manager.

Mr. Croft is also well known as a motor boat racing man, and has made many friends among yachtsmen by his good sportsmanship in racing his speed boats on the Great Lakes and tributary waters.

Marine Glue for Fitting Out

In fitting out your boat you will find Jeffery's Patent Marine Glue for deck and hull seams and repairing rents in your canvas deck coverings a mighty useful and handy compound. It accomplishes its purposes absolutely, and its flexibility and adhesiveness make it easy to handle in making satisfactory repairs. The fact that it allows for expansion and contraction, and is never mussy or sticky, and won't try your temper, are sufficient reasons why you should use it.

It is always ready to use, is waterproof, and is not affected by heat or cold. It will enable you to attach cork, canvas, felt, oil cloth, rubber, leather and linoleum to cement, iron, steel, wood or stone. You are trying no experiment when you use this glue, as it has stood the test for over half a century, and is used extensively.

The Neversink Life Preserver Coat

All yachtsmen, and particularly all those w drive fast motor boats, where the chances better than two to one that they will find the selves in the drink before they get back, will interested in a new type of life preserver wh has been recently placed on the market by American Life Saving Garment Company, State street, Boston, Mass. Instead of be made up in the bulky fashion of the usual cork air life preserver, this preserver is made up in form of a jacket or coat of a special Java fi which is soft and pliable and yet has many ti the buoyancy of cork. This fiber is sewed i the lining of the jacket, so that when worn t jacket to all appearances does not seem m heavier than an ordinary coat, and it can be w out of the boat as well as in it with equal co fort. In addition to being made in coat form is also made in the form of a vest with a belt.

It is not only a thorough life preserver but w answer the purpose of a coat as well, giving the protection against cold that a heavy swea or hunting jasket would. The manufacturers that in exhaustive tests these coats have sustai a weight of 21 pounds in fresh water for six da

(Continued on page 314.)

Steering Gears
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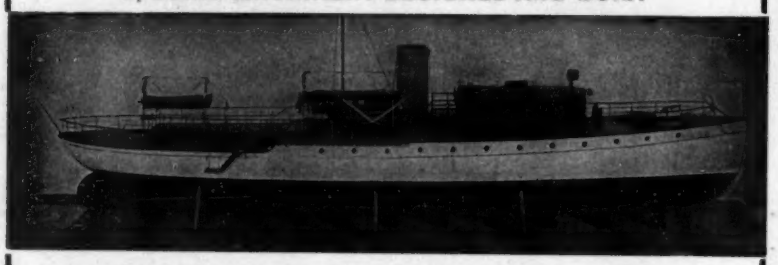

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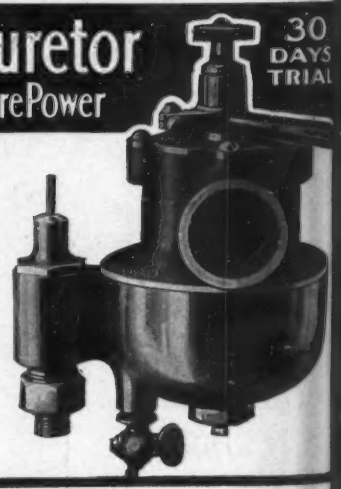

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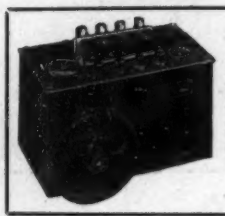

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You don't have to bother with your lubrication when you use a Detroit Oiler. It starts and stops with the engine and automatically changes its rate of feed to correspond to every variation in engine speed. Easily installed on any engine. Write for Catalog P-69.

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All Genuine Harthan Propellers, whether for

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measure up to the highest possible standards. They are the wheels for those who want the **best.** They are no more expensive than most goods of inferior quality.

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it dries quickly and should be used by all yachts and motor boats for "hurried work" and cruising, as well as for wood and metal work under water.

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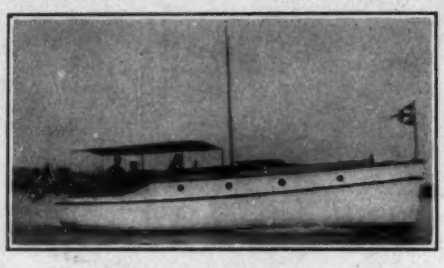

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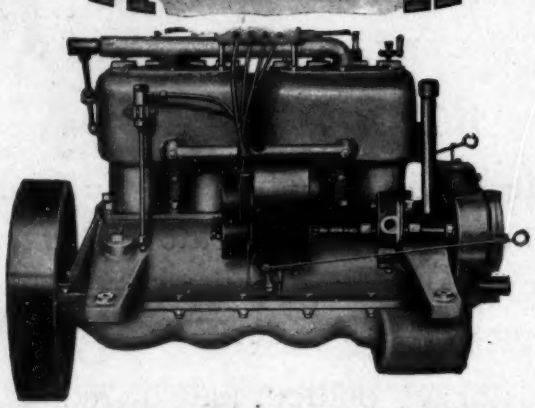

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CYLINDERS—Grey iron; cast in pairs; water-jacket integral.
CRANK-CASE—Grey iron; removable lower half forms oil-pan.
CRANK-SHAFT—Drop-forged; diameter, 1¾ in.; three die-cast bearings, 1¾ in. x 3½ in., 1¾ in. x 3 in., and 1¾ in. x 2½ in.; fly-wheel flange forged integral.
CAM-SHAFT—Drop-forged; cams forged integral, hardened and ground; three die-cast bushings, 1¾ in. x 1¼ in.; time-gears, grey iron and steel.
PISTONS—Special grey iron; three rings, ground; oil-groove at bottom, pins ¾ in. steel, harnened and ground.
CONNECTING-RODS—Drop-forged, 9 in. centers; bushings die cast, 1¾ in. x 2½ in.; cap attached to connecting-rod by two bolts.
VALVES—1¾ in. diameter; cast iron heads welded to steel stems which are ground; valve tappets hardened and ground; valve-springs and stems enclosed.
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LUBRICATION—Splash system, with plunger pump; oil-level automatically maintained; glass sight-feed gauge and float gauge in reservoir.
Regular equipment includes carburetor and water-pump.
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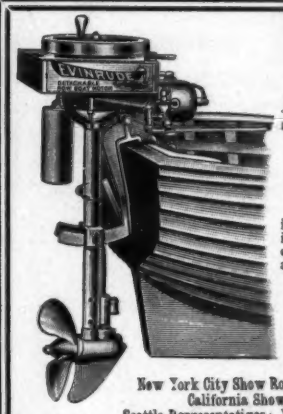

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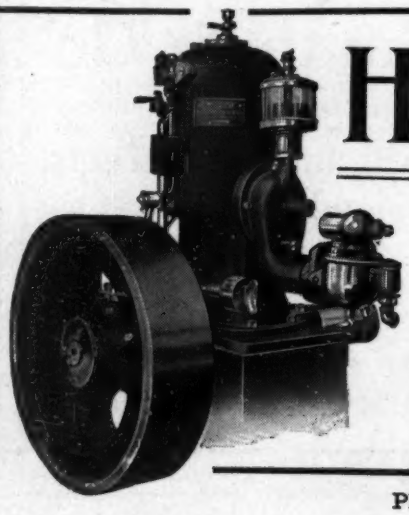

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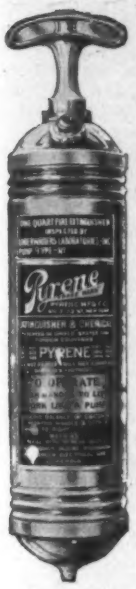

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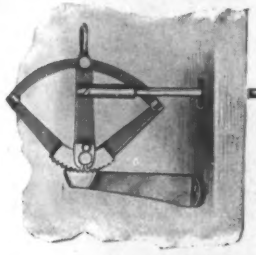

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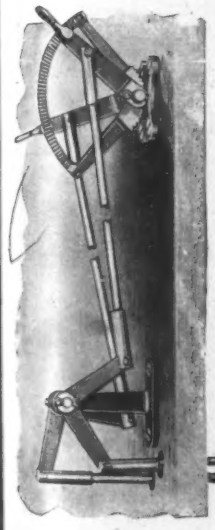

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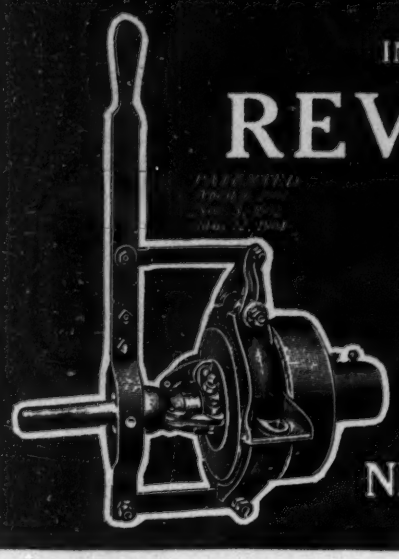

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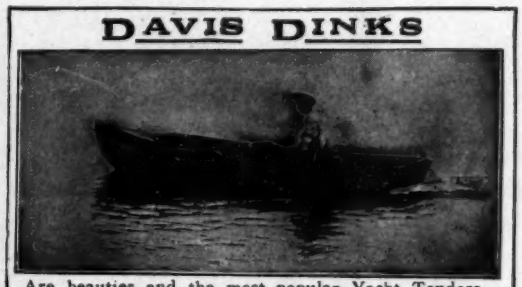

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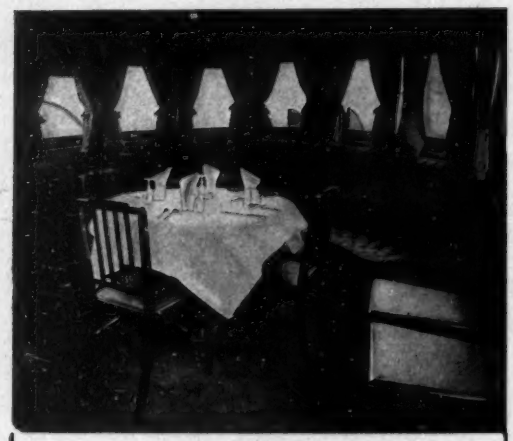

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The Adventuress

(Continued from Page 273)

ton buckets of water were drawn from the sea and the owner and designer were enjoying great sport in dashing brine over each other in "the altogether."

Friday night the wind shifted to northwest in a vicious squall that demanded instant action. The mainsail was lowered and secured, trysail being set, and the Adventuress, again on her course, romped famously. For six hours the wind blew hard, then fizzled. The yard was rigged on the foremast, the square sail set, and the Adventuress got all there was to be had in the right direction for the lily isle. By dusk the wind had gone to cover and the yacht was rolling and slatting in the heavy swell.

For the next 24 hours the wind was an unknown quantity, at least in the region where the little whale-hunter slapped and sloshed. The motor was unlimbered and the yacht made good toward Bermuda at full seven knots an hour.

Monday found the wind heavy and punctuated with squalls. Sail had been reduced to main trysail, foresail, forestaysail and jib. Rain descended in sheets and slantwise. Conditions were decidedly uncomfortable. Just at dark St. David's Head was sighted—exactly where it ought to be according to calculation, a sight having been secured some hours previously. No pilot put in an appearance, and the yacht was jogged on and off during the night. Time, from Boston Light to time of sighting St. David's Head, 4 days 2 hours.

Esperanza

(Continued from page 281.)

alcohol the 188 degrees, denatured, seems to give easier starting than the heavier grades. Both alcohol and kerosene are used through a large carburetor, with a metallic float; naturally a shellac-coated cork float is out of the question with alcohol. So far as known this is the first yacht in this country fitted with a kerosene engine starting directly on alcohol, without the use of hot heads.

In ballasting, the method of the famous Gloucester fishermen was followed, the greater part of the ballast being in the form of pig and scrap iron, bound together by Portland cement, laid directly into the lowest part of the hull; relatively a small part of the ballast is outside. While a boat ballasted in this way is not so stiff as when fitted with outside ballast, she is much pleasanter in a seaway and strains her hull and spars very much less. As all the frame and the inside of the underwater planking was treated thoroughly with carbolineum, then with hot pine tar and turpentine, then with two coats of red lead, the direct contact of the cement with the framing and planking can do no harm; in fact, the Gloucester builders claim that a hull so ballasted keeps cleaner and lasts longer.

Esperanza was designed and built on the tidewater farm of her owner, Hope, near Easton, Maryland, in view of many a beamy schooner, able pungy, shapely bugeye and fast Chesapeake canoe sailing the waters just outside the shop where she took form. Her frame was partially gotten out in Wisconsin to facilitate transportation, and shipped to "the Eastern Shore."

At Hope the services of several good ship carpenters were enlisted, under the able superintendence of Captain George W. Jackson, a well-known builder of Oxford, Maryland. All the work was done by the day, and no part was allowed to be slighted, whether visible or not; for, in the building of a cruiser the lives of men, as well as the life of the vessel, depend on good material strongly wrought with forethought and good faith.

While Esperanza is of unusual strength and heavily equipped, she has had the satisfaction of easily overhauling under working sails anything in the way of a sailing vessel that she has yet met in her limited cruises; so it may be safely said that while this cruiser is not in the racing class, yet she is no "tub," to be held in derision by every smart trading vessel. In several ways she is a departure from common practice, but she is a success.

ERRATUM.—On page 278, through a misprint it is stated that the midship section of this boat is placed 5ft. aft of the *stern*. It is very obvious that this should have read aft of the *stem*.

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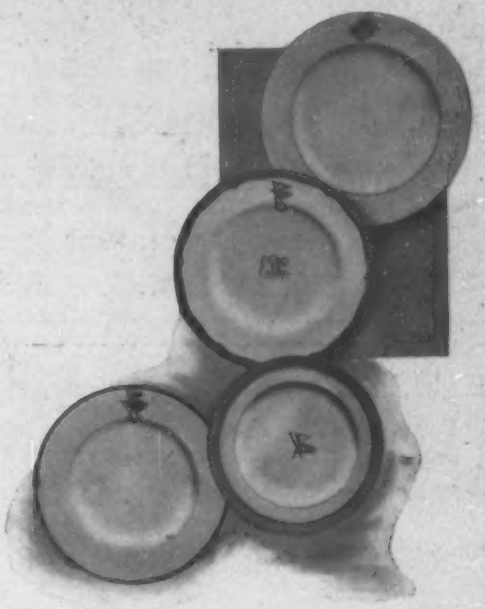

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